Racial and Gender Pay Gaps in California State Government:

A Path Towards Workforce Equity

An analysis of pay gaps across racial/ethnic and gender subgroups in California's civil service and a survey of strategies to advance parity within the State's workforce

Prepared for:
The California Health in All Policies (HiAP) Task Force

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Executive Summary

This report estimates pay across racial/ethnic groups and analyzes differences in pay by race/ethnicity and sex within California's civil service, a workforce of nearly 220,000 employees, using publicly available data from the California Department of Human Resources (CalHR) and the U.S. Census American Community Survey (ACS).

Findings illustrate that, on average, employees of color are paid 14% less than White employees in the State's civil service. Pay gaps increase significantly, however, when focusing on underrepresented minorities (URM) – which includes Black, Hispanic/Latino, and Native American/Alaskan Native individuals – and females of color. For instance, URM female employees make 32% less than White male civil servants. The widest gap among civil service employees is approximated to be between Pacific Islander females and White males at 36%.

This research also examines several drivers of racial/ethnic pay inequities. It reveals that disproportionate representation in low-paying occupations likely strongly contributes to lack of pay parity, especially URM employees. Concentration in part-time versus full-time and seasonal versus year-round employment is also found to be a source of inequity in the State's civil service. Approximately 23% of females of color are employed part-time, whereas only 7% of White males are in part-time work.

Notably, pay gaps persist even after controlling for educational attainment and rank and file and supervisory positions. In fact, pay inequality grows when moving up the supervisorial ladder: URM rank and file make 11.53% less than White rank and file, while URM supervisors make 16.32% less than White supervisors. Furthermore, when

Summary of Recommendations

Category A: Recommendations for the GARE Capitol Cohort and its participating member departments

1. Analyze racial and gender pay equity for each participating department
2. Incorporate CalHR workforce development and planning information into Capitol Cohort training curriculum
3. Integrate racial and gender pay equity findings into departmental GARE Racial Equity Action Plans

Category B: Increase applicability, transparency, and accessibility of State data

4. Update State employee demographic questionnaire (Form 1070) to include more race and gender options
5. Track and document self-reported data from Form 1070
6. Enhance accessibility of publicly available data

Category C: Enhance and expand workforce development strategies to increase pay parity for the larger enterprise of State government

7. Learn from existing state and local racial equity initiatives
8. Bolster racial equity components of existing Upward Mobility, Workforce Development and Planning, and Civil Rights programs at CalHR
9. Conduct further research to refine the State's understanding of the racial/gender pay gap and its underlying drivers

controlling for educational attainment, this analysis demonstrates that White employees without a bachelor's degree are paid more on average than some racial/ethnic minorities *with* a bachelor's degree and/or graduate degree.

This paper also includes three categories of recommendations (see page 3). The first set of recommendations are how departments participating in the Government Alliance on Race and Equity (GARE) Capitol Cohort pilot initiative can further advance racial equity within their respective organizations. The next two categories provide recommendations at the enterprise-level (State government). The second category focuses on strengthening State data reporting, collection, and analysis while the third set of recommendations focuses on policy recommendations to reduce inequities. Strengthening data reporting and collection practices is essential for understanding the problem, identifying strategies to address these inequities, and measuring progress. Policy recommendations from this research include integrating a more intentional equity lens to existing activities, such as workforce development. Programs such as GARE provide a model for how the State can systematically tackle racial inequities.

In addition, future research should address some of the limitations of this analysis by examining publicly unavailable employee microdata to determine what percentage of pay gaps can be explained by classification, occupation, and other measurable variables, and what percentage is left unexplained. It is also critical to understand whether disparities are due in part to larger issues across recruitment, exam/hiring, retention, and/or promotion practices. Ultimately, in order to implement strategies that will appropriately and effectively create a more racially equitable workforce, better insight is needed into the systemic problems leading to and exacerbating the trends highlighted in this report.

Key Terms

- **Job classification:** Job classification or "class" means a group of positions sufficiently similar with respect to duties and responsibilities that the same title may reasonably and fairly be used to designate each position allocated to the class, that substantially the same tests of fitness may be used, that the same minimum qualifications may be required, and that the same schedule of compensation may be made to apply with equity.[1]

- **Pay:** The salary or wages of an employee earned from civil service employment.

- **Rank and file:** Rank and file employees comprise the body of the organization and do not hold supervisor or manager roles, as opposed to its leadership.

- **Salary:** A salary is a fixed amount an employer pays an employee (typically on an annual or monthly basis). When an employee has a salary, pay is not dependent on the specific hours worked (with the exception of overtime rules).

- **State civil service:** The civil service includes officers and employees of the State of California, including civil servants or public servants employed in state government departments or agencies. Broadly speaking, permanent appointment and promotion in the civil service is made under a general system based on merit ascertained by competitive examination.[2]

- **Supervisor:** Supervisors are leaders within a department, office, or agency; this includes job classifications classified as supervisorial or managerial in nature.

- **Underrepresented minority (URM):** Underrepresented minorities (URMs) — Blacks, American Indians/Alaska Natives, and Hispanic/Latinos— are racial/ethnic groups who have historically comprised a minority of the U.S. population and are systematically underrepresented in higher education, and many fields and occupations. URM is a term that is widely used in research and in programs around diversity, inclusion, and access in order to document trends relating to the experiences of historically marginalized groups. [3,4,5,6]

- **Wages:** Wages differ from salary in that the amount of pay earned by an employee with a wage is dependent on hours and/or weeks worked.

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[1] California Government Code, section 18523. https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=GOV&division=5.&title=2.&part=2.&chapter=1.&article=2.

[2] California State Constitution, Article 7 Public Officers and Employees https://law.justia.com/constitution/california/article_7.html.

[3] Underrepresented Minorities in the U.S. Workplace. *The American Geosciences Institute.* Currents #34. May 21, 2010. https://www.americangeosciences.org/workforce/currents/underrepresented-minorities-us-workplace.

[4] Ross, Frank K.; Clarke, Allyson T.; & Wells, Jean T. Attracting Underrepresented Minorities to the Accounting Profession: Insights into Diversifying the Talent Pipeline. Howard University School of Business: Center for Accounting Education. April 2014.

[5] Hernandez, Rigoberto; Stallings, Dontarie; & Iyer, Srikant. The Gender and URM Faculty Demographics Data Collected by OXIDE. Diversity in the Scientific Community Volume 1: Quantifying Diversity and Formulating Success. January 1, 2017 , 101-112. DOI:10.1021/bk-2017-1255.ch004.

[6] Aberg, Judith A; Blankson, Joel; Marrazzo, Jeanne; & Adimora, Adaora A. Diversity in the US Infectious Diseases Workforce: Challenges for Women and Underrepresented Minorities, The Journal of Infectious Diseases, Volume 216, Issue suppl_5, 15 September 2017, Pages S606–S610, https://doi.org/10.1093/infdis/jix332.

Background

In recent years, the State of California has made it a priority to close the gender pay gap in government, recognizing that "like salaries should be paid for comparable duties."[7] To this end, Governor Jerry Brown and the State legislature have expanded upon the Federal Equal Pay Act and the California Equal Pay Act by enacting the California Fair Pay Act (SB 358) in 2015 and passing a bill in 2017 which bans employers from inquiring about a job candidate's salary history.

> ***"Like salaries should be paid for comparable duties"***
>
> California Department of Human Resources

In 2016, a year after the passage of the California Fair Pay Act, the California Department of Human Resources (CalHR) released a report, "2014 Report on Women's Earnings in California State Civil Service Classifications" (Gender Pay Report). The report described the pay gap between women and men employed in California's civil service and shed light on the following statistic: women in California's state workforce are paid 80 cents on the dollar compared to men employees, a gap greater than the gender pay differential in California's private sector and the federal workforce.[8]

Nationwide, research has proven that racial wage gaps, in addition to gender wage gaps, persist and that educational attainment alone does not explain these inequalities. College-educated Black and Hispanic men in the U.S. earn roughly 80% of the hourly wages of White college educated men, and Black and Hispanic women with a college degree earn about 70% of the hourly wages of similarly educated White men.[9] Labor force experience and other measurable factors do not fully account for these disparities either.[10] Using Census data from 1990, sociologists Eric Grodsky and Devah Pager found that even after controlling for education and workforce experience between Black and White men working in the public sector, 48% of the wage gap was left unexplained. Adding in occupational differences explained an additional 20% of the wage gap, meaning that 28% of the wage gap was still unaccounted for.[11] Research suggests

> ***Explained vs. Unexplained***
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> Explained: Proportion of pay gap driven by quantifiable variables which correlate with pay (education, occupation, etc.), and should in theory fully explain pay.
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> Unexplained: Share of pay gap "leftover" after controlling for measurable concrete factors (i.e. explainable factors).

[7] 2014 Report on Women's Earnings in California State Civil Service Classifications. California Department of Human Resources. October 2016.
[8] Ibid.
[9] Patten, Eileen. "Racial, Gender Wage Gaps Persist in U.S. despite Some Progress." Pew Research Center, July 1, 2016.
[10] Ibid.
[11] Grodsky, Eric, and Devah Pager. "The Structure of Disadvantage: Individual and Occupational Determinants of the Black-White Wage Gap." *American Sociological Review* 66, no. 4 (2001): 542-67.

that unexplained gaps may be due, at least in part, to discrimination – and that some portion of pay gaps explained by concrete measurable factors such as occupation may even be attributable to discrimination.[12]

Given these state and national trends, there is reason to believe people of color (POC) and underrepresented minorities also lack pay parity across state government in California. This report seeks to answer that question using publicly available data provided by CalHR and the U.S. Census' American Community Survey (ACS). Using these data sets, this project analyzes racial wage gaps across the entirety of California's civil service workforce from approximately 160 agencies in the State.[13] This research also builds off of CalHR's 2014 Gender Pay Report, examining the intersection between race/ethnicity and gender and taking into consideration how women of color and men of color may be distinctively impacted.

The overall goals of this analysis are to:

- Identify and estimate racial pay gaps among California civil servants, exploring differences by race/ethnicity and gender.
- Examine sources and drivers of racial/ethnic and gender pay inequities by controlling for occupation, supervisor status, educational attainment, and more.
- Survey policy alternatives to advance racial equity in the State's workforce.

About the Health in All Policies (HiAP) Task Force

This project was commissioned by staff of the California Health in All Policies (HiAP) Task Force, in support of the Task Force's work to advance equity through government practices. Established in 2010, the HiAP Task Force is an innovative initiative bringing together 22 state agencies, departments, and offices to identify priority programs, policies, and strategies to improve health, equity, and sustainability across policy fields that fall outside of the traditional realms of public health and health care. The Task Force is facilitated through a partnership between the Strategic Growth Council (SGC), California Department of Public Health (CDPH), and Public Health Institute (PHI).

The HiAP Task Force believes that all Californians should have the opportunity to live a long, healthy life, regardless of their income, education, or race. Nevertheless, stark inequalities persist in California, with the largest burdens and barriers to health facing people of color and low-income communities. The HiAP Task Force addresses a range of equity issues, and has partnered with the Government Alliance on Race and Equity (GARE) to pilot a Governing for Racial Equity Initiative for State Government in 2018, also known as the Capitol Cohort. To

[12] Ibid.
[13] Figure provided by the California Department of Human Resources (CalHR). CalHR's Statewide 5102 Report - State Employees by Occupational Group and Classification contains data for approximately 160 agencies with civil service employees.

date, the GARE Capitol Cohort pilot is supporting 170 people in 12 teams across 19 departments and agencies to increase racial equity in their institutions' practices and programs.

Many GARE Capitol Cohort teams have identified workforce development as a necessary early step towards racial equity, and a major objective of this project is to inform and enhance the workforce development strategies being developed and implemented by those teams as they develop racial equity action plans.

Methodology and Limitations

This research relies on two data sets: 1) CalHR's Statewide 5102 Report - State Employees by Occupational Group and Classification and 2) the United States Census American Community Survey (ACS). To enrich quantitative findings, the report also draws on qualitative information from several key stakeholder interviews.

Overall Limitations

There are unique limitations with respect to each data set, described in detail below. Overall, a limitation of this research is that it utilizes proxies for employee data from two publicly available data sets to estimate race/ethnicity and gender pay differences. Individual-level pay, race/ethnicity, and gender data for all California civil service employees was not available for use in this analysis. A recommendation for future research is to repeat this analysis using disaggregated microdata for all State employees. The use of this microdata would eliminate many of the limitations described below and particularly for Report 5102.

Another limitation is that this study is unable to control for all major variables (i.e., factors to control for such as education, occupation type, supervisor/manager status, etc.) in a comprehensive statistical model due to pulling variables from various data sets; a model of this nature would ultimately provide an estimate of how much of the racial/ethnic pay gap is attributable to "explainable" vs. "unexplainable" factors.[14] Despite this limitation, the four causal factors expanded upon in "Data Analysis Part 2" (page 22) provide a strong picture of the various drivers that are likely related to pay disparities in California's civil service.

Finally, as both data sets only capture whether a respondent is male or female, this research is limited to evaluating sex and is unable to account for an employee's gender identity along the gender spectrum. It would be ideal to analyze the intersection between race/ethnicity and gender (whether an individual identifies as a woman, man, transgender, non-binary, or other gender as

Gender vs. Sex

The State's Employee Race/Ethnicity Questionnaire (CalHR Form 1070) and the U.S. Census collect information on sex (the biological differences between males and females), not gender (one's gender identity). Thus, in some instances such as the Gender Pay Report, sex and gender are used interchangeably. This report strives to make a distinction between the two.

[14] This study does consistently control for full-time and year-rou

opposed to their biological sex), since individuals are discriminated against on the basis of gender expression and gender identity, including transgender identity.

Research Methodology

Three data sources were used as part of this study: 1) the California Department of Human Resources Report 5102, 2) the U.S. Census' American Community Survey (ACS), and 3) qualitative methods. The data, methods used to analyze them, and limitations of each data set are described in the tables below.

Data Source: CalHR's Statewide 5102 Report - State Employees by Occupational Group and Classification		
Description	**Methods**	**Limitations**
Statewide Report 5102 captures the number of state employees by race/ethnicity and sex for each job classification and occupational group across the California state civil service. Report 5102 does not include salary or wage data nor does it identify which positions are rank and file or supervisory in nature.	1. Publicly available pay range data for each classification was linked to Report 5102. The midpoint of each job classification's monthly pay range was used as a proxy for employee pay (Exp: Water Resources Technician II: $4,264.00 - $5,337.00, Median pay: $4,800.50).[15] 2. Pay was standardized to reflect a 40-hour work week for four weeks per month for each employee.[16] 3. Supervisors and managers (hereon after referred to as supervisors) were determined based on the following criteria:[17,18] ● Job classification title includes "supervisor," "manager," "supervising," or "managing" in the title, ● Employee category includes "supervisor," "manager," "supervising," or "managing" in the title, or ● Occupational group is listed as "management occupations."	1. This analysis misses any potential within-classification variation in pay. Pay variation within classifications could arise due to a number of reasons including differences in the service months[19] of an employee, employee starting salary, and merit raises. Specifically, this analysis will not reveal if there is employee pay stratification within classifications due to POC having lower starting salaries than peers, being concentrated in lower paying subscales[20] within a classification, or not receiving merit-based raises at the same rate as counterparts. It will also not demonstrate any potential differences in overtime pay. 2. Report 5102 does not provide data on whether employees are

[15] State of California Civil Service Pay Scale - Alpha by Class Title. https://www.calhr.ca.gov/Pay%20Scales%20Library/PS_Sec_15.pdf.

[16] This standardization was applied because while most classifications have a monthly pay period, some have an hourly or daily pay period, and the number of hours or days an employee works and whether the employee is part-time or full-time is undisclosed.

[17] While these criteria should account for most supervisor and manager roles, there is a possibility this analysis may not have fully captured all supervisors and managers and that there may be additional supervisory positions which are identified within classifications differently.

[18] Upon the conclusion of this analysis (June 2018), the researcher was notified that supervisor, manager, and rank and file designations are made available on the pay scale range document (see here) via Collective Bargaining Identifier (CBID) codes.

[19] Service months are the number of months an employee has worked in a particular job classification.

[20] Many positions have multiple pay subscales (e.g., range A, B, C, D, etc.) for different minimum qualification levels within a classification. As CalHR does not report the number of staff across subscales, the midpoint between minimum of the lowest paying range and the maximum of the highest paying range was used.

Data Source: CalHR's Statewide 5102 Report - State Employees by Occupational Group and Classification		
Description	**Methods**	**Limitations**
	The remainder of employees were classified as rank and file. 4. Weighted averages and pay confidence intervals were then calculated for employees in each racial/ethnic sex subgroup.	part-time versus full-time or year-round versus seasonal, or limited-term or temporary workers as opposed to permanent civil service employees. Since the pay standardization assumes all employees are full-time and year-round, results from Report 5102 do not illustrate differences between part-time/seasonal employees and full-time/year-round employees, and the analysis is unable to isolate permanent civil service employees.

Data Source: U.S. Census American Community Survey (ACS)[21]		
Description	**Methods**	**Limitations**
The ACS is an ongoing survey by the Census Bureau which regularly gathers information on ancestry, education, income, language, migration, employment, and housing characteristics for individuals and households in the U.S. The ACS asks for reported wages and salary[22] of the survey	1. ACS years 2014, 2015, and 2016 were merged to increase statistical power.[23] 2. Four criteria were used to ensure that the ACS sample was comparable to the State's civil service. The sample was restricted to only include respondents who listed their state of residence as California, identified their employer as state government, and noted California as their place of work. In addition, the sample was restricted to include only employees who were in the public administration industry. This was an important criterion because without restricting industry to public administration,[24] the sample likely captured workers from California's higher education system, who are state employees but are not in civil service. The final sample included	1. Even after weighting the sample, there are still some inconsistencies in terms of the sample's demographic breakdown. Most notably, females are overrepresented in the sample (see Appendix B). 2. It is not ideal to compare older years of data to more recent years (the December 2017 version of Report 5102 is used in this analysis). However, this research makes the assumption that relative trends in compensation across subgroups did not markedly change from 2014 to

[21] Accessed via IPUMS USA. Steven Ruggles, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek. Integrated Public Use Microdata Series: Version 7.0 [dataset]. Minneapolis: University of Minnesota, 2017. https://doi.org/10.18128/D010.V7.0.

[22] The variable "INCWAGE" from the ACS was used. INCWAGE represents each respondent's total pre-tax wage and salary income for employment listed in the ACS. Sources of income in INCWAGE include wages, salaries, commissions, cash bonuses, tips, and other money income received from an employer (in this case, State government); the variable does not include benefits, investment earnings, and other sources of income.

[23] As of May 4, 2018, the 2016 ACS data is the most recent available year.

[24] Public administration employees include: executive offices and legislative bodies, public finance activities, other general government and support, judicial/justice, public order, and safety activities, administration of human resource programs, administration of environmental quality and housing programs, administration of economic programs and

Data Source: U.S. Census American Community Survey (ACS)[21]		
Description	**Methods**	**Limitations**
respondent, which can serve to augment and verify findings from Report 5102. The ACS also supplies key individual-level variables of interest such as educational attainment and hours worked per week, which are not available through Report 5102.	7,134 respondents, a sufficient sample size for the population of interest. 3. To account for sampling bias, the sample was weighted using the variable "perwt" in the ACS so that the sample more accurately represented a true random sampling of California civil service employees. 4. Average pay of racial/ethnic sex subgroups was calculated to determine raw pay gaps. Covariates (i.e. factors which one expects will correlate and contribute to the dependent variable of interest, in this case total monthly pay) such as educational attainment and part-time vs. full-time status were also controlled for. 6. Samples of Californians employed in the private sector and the federal civil service were also pulled to compare State government pay gap(s) to other sectors.[25]	2017. 3. While merging multiple years of data did create larger sample sizes, some subgroup sample sizes are still quite small (e.g., this approach generated a sample of only 37 Pacific Islanders). 4. Reported data may introduce random error into a measure.[26] Research also suggests that wages and salary as an income source are systematically underreported, especially in the ACS.[27]

Data Source: Qualitative Analysis	
Description	**Methods**

space research, and national security and international affairs. While employees in the judicial and legislative branches are not civil service employees, it is unlikely this will skew results as 1) judicial and legislative employees constitute a fraction of public administrative employees as compared to State civil service employees (there are less than 3,000 legislative employees and 20,000 judicial employees versus 220,000 civil servants in California) and 2) similar gender pay gap trends have been demonstrated across State government, including the legislature. Additional information on ACS industry codes can be found here: https://usa.ipums.org/usa/volii/ind2013.shtml.

[25] The federal workforce sample was restricted to federal employees in California to account for varying compensation levels across the nation (i.e. geopay) and was also restricted to employees who identified their industry as public administration. It does not capture any active duty military.

[26] C. Moore, Jeffrey & L. Stinson, Linda & J. Welniak, Edward. (2000). Income Measurement Error in Surveys: A Review. Journal of Official Statistics. 16. https://www.census.gov/srd/papers/pdf/sm97-05.pdf.

[27] Rothbaum, Jonathan L. Comparing Income Aggregates: How do the CPS and ACS Match the National Income and Product Accounts, 2007-2012. https://www.census.gov/content/dam/Census/library/working-papers/2015/demo/SEHSD-WP2015-01.pdf.

This report also highlights observations regarding state workforce trends, existing programs, and policy interventions which were gathered from key informant interviews and document review. Informant interviews were conducted with staff from CalHR, various departments and agencies, and the Government Alliance on Race and Equity (GARE).	Questions pertaining to the following were asked: • Workforce trends in California state government. • Potential drivers and underlying causes contributing to disparities in the civil service. • Existing processes, policies, and strategies for workforce development, succession planning, and upward mobility (including strengths of these initiatives, areas for improvement, and program outcomes). • Future opportunities and challenges to improve equitable workforce development in California. • How other cities, counties, or states are tackling racial inequities within government.

State Civil Service Demographics

Racial/Ethnic Categories in the ACS & Report 5102

Report 5102 and the ACS use the same racial/ethnic categories. It is important to acknowledge that some communities across the United States dispute the appropriateness and meaning of certain racial/ethnic terminology. As an illustration, there is an ongoing discussion regarding the use of the term American Indian in place of Native American. For the purpose of being consistent across data sources, however, racial/ethnic identifiers were not modified in this analysis.

The racial/ethnic categories in this research are as follows:

- Asian: Cambodian, Chinese, Filipino, Indian, Japanese, Korean, Laotian, Vietnamese, other Asian, multiple Asian
- Black
- Hispanic: Cuban, Mexican, Puerto Rican, South or Central American, other Hispanic
- Native American or Alaska Native
- Other or Multiple race
- Pacific Islander: Guamanian, Hawaiian, Samoan, other Pacific Islander, multiple Pacific Islander
- White

Differences Between Data Sets

A major difference between Report 5102 and the ACS is that Census respondents can pick multiple racial/ethnic categories, which is reflected in the ACS data. In contrast, State employees are only able to select one racial/ethnic identifier on the State's demographic questionnaire (CalHR Form 1070), with the exception of Hispanic/Latino (See Appendix R). To resolve this discrepancy, this research assumes that respondents in the ACS who select multiple racial/ethnic categories would otherwise select the "Other or Multiple race" category if only given the option to select one identifier.

Another distinction is that respondents being interviewed for the ACS can list their ancestries when identifying as Hispanic or Other or Multiple race. This option is currently unavailable on Form 1070.

Demographic Breakdown of the State's Civil Service

Of California's 214,755 civil servant workforce, 57% of employees identify as people of color (Table 1). Males represent 54% of the workforce and females represent 46% of the workforce. Females of color and males of color each make up roughly 28% of employees. A little over one third (35%) of state employees identify as an underrepresented minority, or URM.

Table 1: Demographic Breakdown of the State of California's Civil Service

	Females		Males		Both Sexes	
Race/Ethnicity	Number	Percent	Number	Percent	Number	Percent
Asian	19,500	9.08%	17,871	8.32%	37,371	17.40%
Black	11,950	5.56%	9,085	4.23%	21,035	9.79%
Hispanic	24,098	11.22%	29,279	13.63%	53,377	24.85%
Native American or Alaskan Native	641	0.30%	712	0.33%	1,353	0.63%
Other or Multiple Race	3,291	1.53%	3,556	1.66%	6,847	3.19%
Pacific Islander	739	0.34%	784	0.37%	1,523	0.72%
White	38,823	18.08%	54,426	25.34%	93,249	43.42%
Total	99,042	46.12%	115,713	53.88%	214,755	100%

Source: 2017 CalHR Statewide 5102 Report

For a comparison of State civil service demographics to the State of California's population and the State's labor force, see the California Department of Human Resources' most recent Annual Census Of Employees In State Civil Service.[28]

Benchmarking Data: The Gender Pay Gap

To assess the preciseness[29] of the midpoint pay range in Report 5102 and salary and wage data from the ACS as proxies for actual employee pay in the State's civil service, this report calculated the gender pay gap using both of these data sets and compared these results to the gap previously reported in CalHR's 2014 Gender Pay Report.

In the Gender Pay Report, CalHR measured the gender pay gap as the difference between the median salary of full-time male employees and female employees.[30] Using data from 2014, the report found that the gender pay gap was

Monthly vs. Annual Pay

It is standard practice within State government to report employee pay on a monthly basis. The publicly available classification pay ranges relied on in this research follow this method, and thus findings in this report will for the most part be reported by average monthly pay.

16, Report to the Governor and Legislature. California
v.calhr.ca.gov/Documents/ocr-census-of-employees-

alues (in this case, pay estimates) are to true values in the

he Gender Pay Report analysis.

20.5% (i.e. females earn 79.5% of the median male salary).[31]

The tables below suggest that the use of pay range midpoints from Report 5102 underestimate pay gaps, whereas wage and salary data from the ACS likely overestimate pay gaps.

CalHR's Statewide 5102 Report

Table 2: Gender Pay Gaps from Report 5102 Compared to 2014 Gender Pay Report

Sex	Report 5102 Median Monthly Pay, 2017	Report 5102 Avg. Monthly Pay, 2017	Gender Pay Report Median Monthly Pay, 2014[30]
Both Sexes	$5,349	$5,677	$5,618
Females	$5,300	$5,328	$5,077
Males	$5,349	$5,976	$6,389
Gender Pay Gap	1%	10.84%	20.5%

Source: 2017 CalHR Statewide 5102 Report

No significant gender pay gap was found between the median monthly pay of females and males in Report 5102 (Table 2). However, when looking at average monthly pay, there is a gender pay gap of 10.84%. Gender pay gaps from Report 5102 are therefore lower than the gender pay gap published in CalHR's 2014 report.

While CalHR has made substantial efforts to start addressing pay disparities between women and men, it is unlikely that the difference between this analysis using the midpoint pay proxy and the findings from the 2014 Gender Pay Report can be fully attributed to a reduction in the gender pay gap over a three-year period. Instead, this underestimation may be due in part to females being more likely to make less than the median and males being more likely to make more than the median pay of certain classifications. Since all employees within a classification are assigned the same pay in Report 5102 (the classification pay range midpoint), this would contribute to a more conservative estimate of the gender pay gap.

If racial/ethnic group stratification follows a similar pattern as gender stratification in the State, it is suspected that findings from Report 5102 will also provide a conservative estimate of pay gaps across racial/ethnic lines.

The American Community Survey (ACS)

Table 3: Gender Pay Gaps from the ACS Compared to 2014 Gender Pay Report

Sex	ACS Median Monthly Pay, 2014-2016	ACS Avg. Monthly Pay, 2014-2016	Gender Pay Report Median Monthly Pay, 2014[1]
Both Sexes	$5,000	$5,481	$5,618
Females	$4,167	$4,628	$5,077
Males	$6,167	$6,378	$6,389
Gender Pay Gap	32%	27.4%	20.5%

[31] 2014 Report on Women's Earnings in California State Civil Service Classifications. California Department of Human Resources. October 2016.

Source: 2014-2016 ACS
Note: Part-time and Seasonal employees were excluded.[32]

The ACS analysis yields larger gender pay gaps than Report 5102 and CalHR's Gender Pay Report (Table 3). When examining median monthly pay, the pay gap is 32%. At 27.4%, the pay gap using average monthly pay (see Appendix C for confidence intervals) is much closer to the reported figure of 20.5%. This indicates that racial/ethnic pay gap estimates from the ACS may be closer to actual estimates, yet are likely to be overestimations.

This discrepancy may be a product of one or more factors, including:

- Self-reported data: Salary and wages in the ACS is self-reported, potentially introducing uncertainty and leading to fluctuations in average pay from administrative pay records. Research suggests that income may be systematically underreported in surveys such as the ACS, but discrepancies may also arise due to random reporting error.[33]
- Sampling bias: Sampling bias, even in random sampling techniques, can often be unavoidable. This includes the fact that certain subgroups may be more or less likely to complete surveys or provide accurate information, and also the greater likelihood of some populations to participate in surveys.
- Unrepresentative sample: Even after weighting, the sample is not fully representative of demographics in the State's civil service (Appendix B). This inconsistency could have introduced a new variable into the analysis that may explain the higher pay disparity.

The larger gender pay gap found in the ACS data may also indicate actual systematic within-classification differences in pay that are not captured by Report 5102. The ACS includes reported pay (as opposed to the classification pay midpoint used in Report 5102), and yields a larger gender pay gap than is captured by the midpoint pay data from Report 5102.

This hypothesis is also substantiated by the fact that most female racial/ethnic subgroups have higher average pay in Report 5102 than compared to the ACS, while the opposite is true for males (see Appendix D). Most male racial/ethnic groups have lower pay in Report 5102 than the ACS, leading to the larger gender pay gap in the ACS. This divergence is unlikely to be caused by reporting biases or random error, especially as there is no research to suggest that females systematically underreport while males over report. Again, this points to the possibility that there may be pay inequity among employees in the same class, as within-classification variation in pay is the main piece of information missing from Report 5102.

A Note About Median vs. Average

[32] CalHR calculates the gender pay gap by looking only at the median salary of full-time workers, so for the purposes of comparing apples to apples, this analysis excludes seasonal and part-time workers when evaluating the gender pay gap in the ACS.
[33] Rothbaum, Jonathan L. Comparing Income Aggregates: How do the CPS and ACS Match the National Income and Product Accounts, 2007-2012. https://www.census.gov/content/dam/Census/library/working-papers/2015/demo/SEHSD-WP2015-01.pdf.

While CalHR's Gender Pay Report looks at median pay, this report cites average pay. This is for several reasons including:

- Population samples: Given that this research looked at samples of the workforce from the ACS, and does not have actual salary and wage information, any values of pay calculated are at best predicted values of pay in the California civil service population. Thus, narrowing in on the average makes sense as the average in statistical terms is the predicted (or expected) value of a variable.
- Proximity of average and median: The distribution of pay in both Report 5102 and the ACS is skewed right. The skewness of pay in Report 5102 is 3.48 and 2.92 in the ACS.[34] This is to be expected as pay can only reasonably increase for an employee and is unlikely to go below a certain threshold (i.e. a livable wage according to public sector standards). While the distribution is not normal, the median and average pay in both data sets are between $328 to $481 off from one another, indicating that using the average is not problematic (Tables 2 and 3).

(Note: For definitions on statistical terminology, see this guide on statistics from the University of California, Berkeley's statistics department.)

Findings

The racial/ethnic pay gap between White employees and employees of color—controlling for part-time and seasonal employee status— is estimated to be between 9% to 18.8%. The pay gap increased significantly when looking at underrepresented minorities and when sex was introduced into the analysis (e.g., females of color compared to White and Asian males).

Employees of color are paid 9% to 19% less than White employees

Sections below explain these findings, provide insight into the causal factors behind pay inequities in the State, and measure the magnitude of California's civil service pay gap with that of pay gaps within the Federal Civil Service and the California's private sector labor force.

Data Analysis Part 1: Average Pay and Pay Gaps

Average Monthly Pay by Race/Ethnicity and Sex[35]

[34] If skewness is negative, the data are skewed left, and is skewness is positive, data values are skewed right. If skewness is equal to 0, the data is perfectly symmetrical and normally distributed. A skewness value greater than the absolute value of 1 generally indicates a highly skewed distribution.

[35] Results have not been adjusted for official tenure type, e.g. permanent civil service status vs. limited-term or temporary employee status, as neither data set provides this information. However, the pay standardization technique used in Report 5102 and highlighted on page 9 should for the most part prevent results from being skewed by differences in part-time vs. full-time (time-base) and year-round vs. non-year-round status (non-year-round status

Findings from Report 5102 indicate that average pay across all civil service employees is $5,677.48 per month, at just over $68,000 annually.[36] The highest paid racial/ethnic group is Asians and the lowest paid is Native American/Alaskan Natives (Figure 1). The trend stays consistent when breaking down by race/ethnicity and sex: the highest paid racial/ethnic and sex subgroup is Asian males at $6,305.38 per month and the lowest paid subgroup is Native American/Alaskan Native females at $4,736.45 per month (Figure 2). This represents a pay gap of nearly 25% from Report 5102 data.

The fact that Asians are at the top of the earnings spectrum is not unexpected. This follows national labor trends; nationwide, the only group to earn more than White males on average are Asian males.[37]

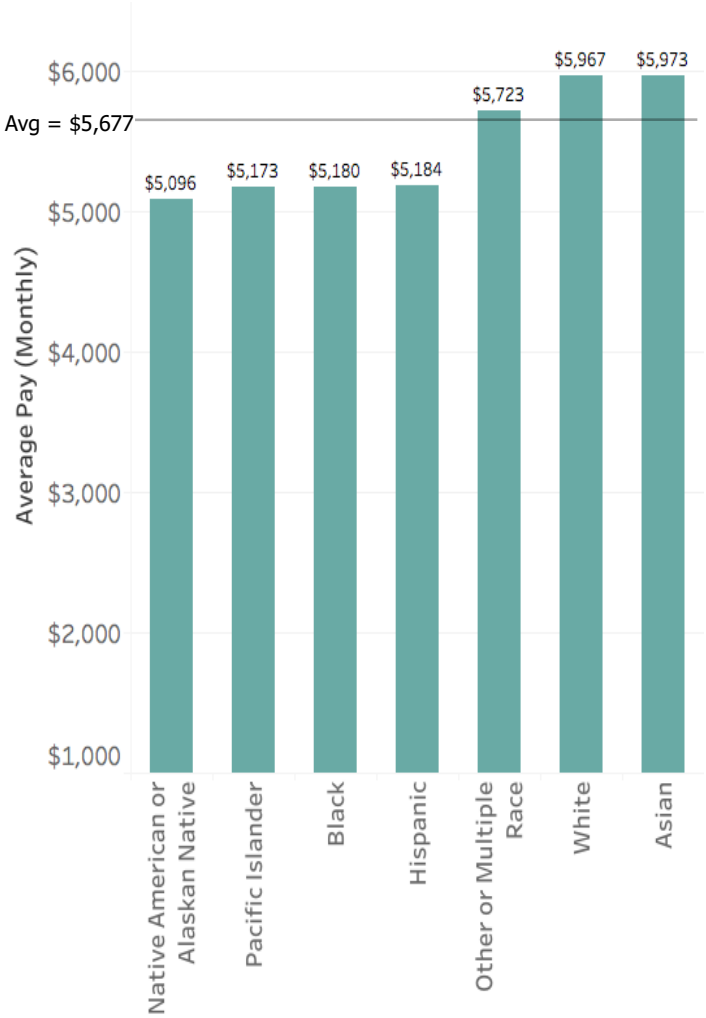
Data illustrates that Asian, White, and Other or Multiple race employees as a whole are paid above average, while Hispanic, Black, Pacific Islander, and Native American or Alaskan Native employees are paid below (Figure 1). However, disaggregating these groups by sex (Figure 2) shows that no female subgroup is paid above the total employee average of $5,677.

might indicate temporary or limited-term work). Moreover, average pay and pay gaps from the ACS have been isolated to full-time year-round employees unless noted otherwise.

[36] Total average monthly pay from Report 5102 was only $60 higher than the median monthly pay reported in CalHR's 2014 Gender Pay Report ($5,618 per month), producing confidence in this as the true State average.

[37] Patten, Eileen. "Racial, Gender Wage Gaps Persist in U.S. despite Some Progress." Pew Research Center, July 1, 2016.

Figure 1: Average Monthly Pay by Race/Ethnicity

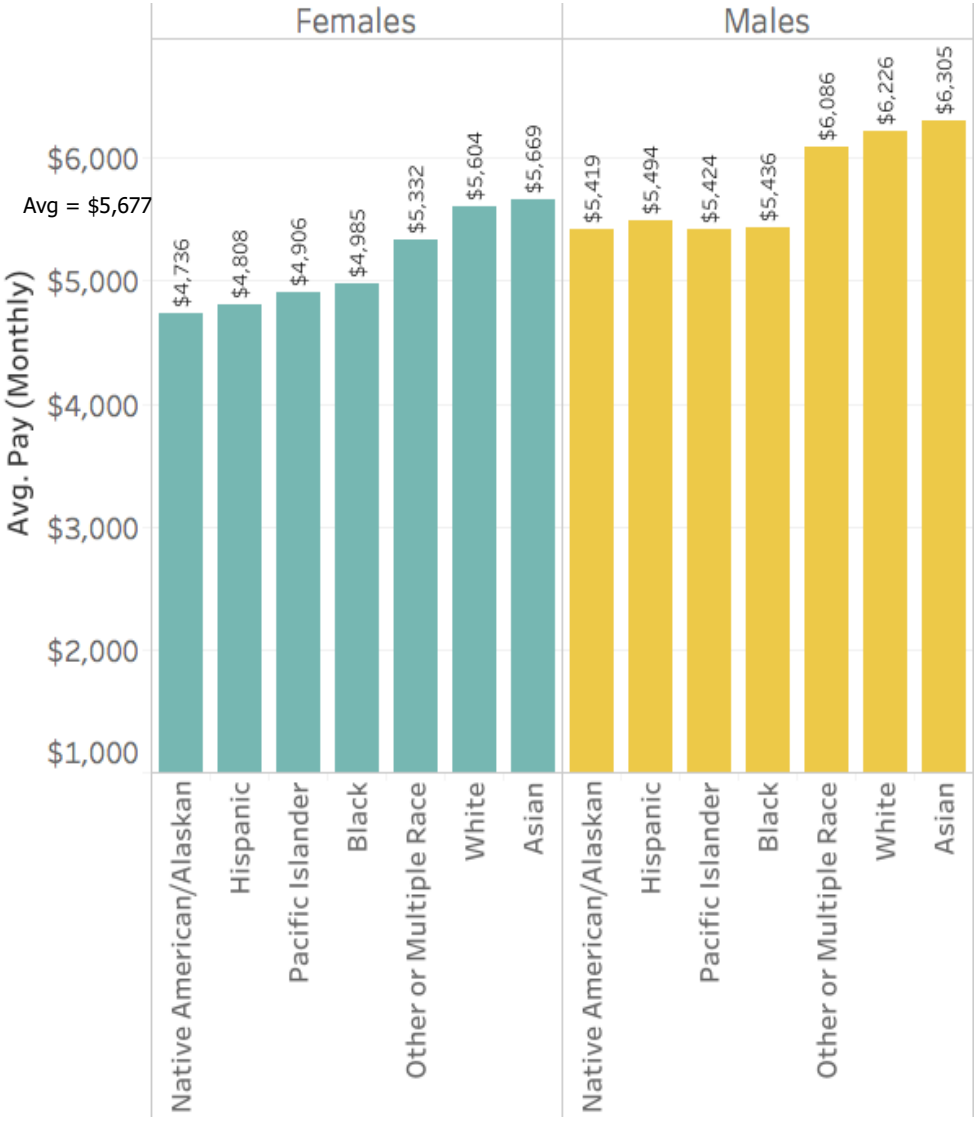


Source: 2017 CalHR Statewide 5102 Report

A noteworthy finding of this analysis is that, on average, White females are paid more than URMs, both male and female. The average monthly pay of White females is $5,603.76, whereas URM males are paid an average of $5,478.92 per month (Figure 2), and these averages are statistically different from one another (see appendices D-F for confidence intervals). Other salient findings from Report 5102 include (appendices D-F):

- Native American/Alaskan Native, Pacific Islander, Black, Hispanic, and Other and Multiple racial/ethnic groups' pay are statistically different from White and Asian subgroups.
- Asian pay is slightly higher than White pay, but these groups as a whole are not statistically different from one another.
- When racial/ethnic groups were disaggregated by sex, however, White female pay vs. Asian female pay and White male pay vs. Asian male pay became statistically different.

Figure 2: Average Monthly Pay by Race/Ethnicity and Sex

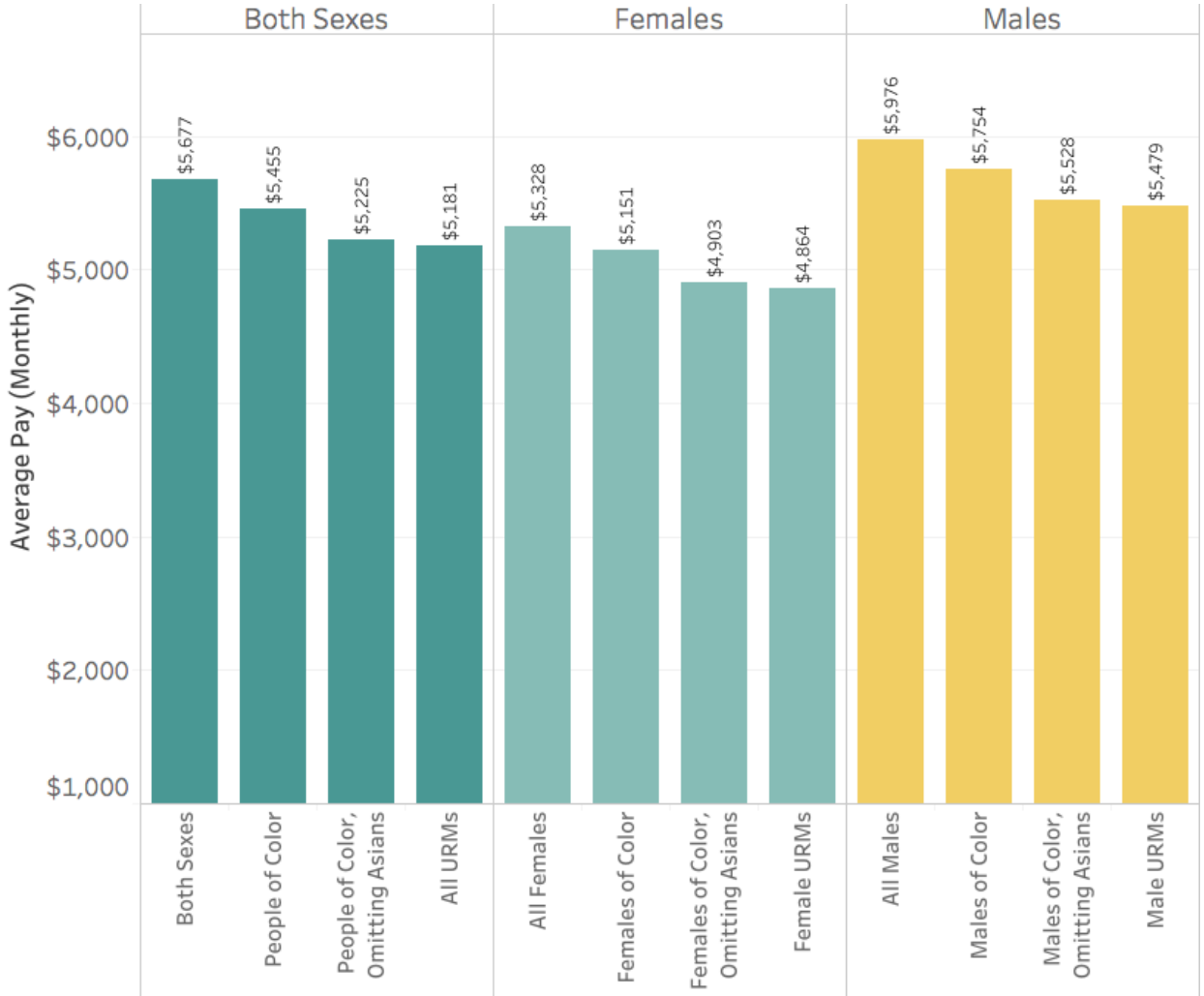


Source: 2017 CalHR Statewide 5102 Report

It is also important to note that aggregate data skews average pay among employees of color (Figure 3). In particular, the Asian subgroup skews average pay. Average monthly pay for all employees of color decreases from $5,455 to $5,255 after omitting Asians. This is partly due to Asians being more likely than URMs and Pacific Islanders to be concentrated in higher paying occupations and therefore higher paid classifications. For instance, Asian males and females constitute 9.82% and 10.34%, respectively, of positions in the lowest paid quintile of occupational groups (Appendix K). URM employees, on the other hand, are in 45% of these positions (Table 8).

Although they are the highest paid racial/ethnic subgroup, disaggregating data on Asian employees by ancestry reveals additional complexities. Table 4 shows that there are significant disparities in pay across Asian ancestral groups. As the lowest paid Asian group, Laotians are paid 73.5% of Koreans, the highest paid Asian subgroup.

Figure 3: Average Monthly Pay by Race/Ethnicity and Sex by Various Subgroup Aggregations



Source: 2017 CalHR Statewide 5102 Report

Table 4: Disaggregating the Asian Population: Average Pay by Ancestry

Ancestry Group	N	Average Pay (Monthly)	% of Highest Paid Asian Subgroup	95% Confidence Interval, Lower Tail	95% Confidence Interval, Upper Tail
Cambodian	206	$5,235.98	77.27%	$4,969.20	$5,502.76
Chinese	8,023	$6,265.43	92.47%	$6,209.72	$6,321.14
Filipino	12,657	$5,406.35	79.79%	$5,369.35	$5,443.34
Indian	4,037	$6,759.39	99.76%	$6,653.05	$6,865.74
Japanese	1,784	$6,323.99	93.33%	$6,209.64	$6,438.33
Korean	1,030	$6,775.98	-	$6,602.04	$6,949.93
Laotian	183	$4,981.94	73.52%	$4,748.64	$5,215.25
Multiple	296	$6,281.88	92.71%	$6,013.35	$6,550.41
Other	5,753	$6,055.91	89.37%	$5,989.61	$6,122.22
Vietnamese	3,402	$5,964.42	88.02%	$5,887.80	$6,041.03
All Asians	37,371	$5,973.21	88.15%	$5,947.36	$5,999.07
All Employees	214,755	$5,677.47	83.79%	$5,667.26	$5,687.69

Source: 2017 CalHR Statewide 5102 Report

Pay Gaps

In terms of pay gaps,[38] there are large differences between the ACS and Report 5102. However, patterns between the two are similar: Asian males and White males are the highest paid subgroups and underrepresented minorities including Hispanic females and Native American/Alaskan Native females and Pacific Islander females rank as the lowest paid. The most significant pay gap from the ACS is between Pacific Islander females and White males; Pacific Islander females are paid only 64% of what White males are paid in State government (Table 5). According to Report 5102, the largest pay gap is between Native American/Alaskan Native females and Asian males (25%), with the gap between Native American/Alaskan Native females and White males following closely (24%).

Underrepresented females are paid 22% to 42% less than White males on average.

The pay gap between URM females as a whole and White males is estimated to be between 22% (Report 5102) to 42% (ACS). As explained earlier, the ACS likely overestimates pay gaps while Report 5102 likely underestimates gaps. As a result, this study selects the mid-point between pay gaps from each data set as a better indicator of true pay gaps within the State's civil service. Therefore, the pay gap between URM females and White males is estimated to be around 32%. Moreover, the gap between White employees versus employees of color and URM employees is estimated at 14% and 17%, respectively.

[38] Pay gaps were approximated by taking the average monthly pay of the lower paid group and dividing it by the average monthly pay of the higher paid group, then subtracting that fraction from 1.

Table 5: Most Significant Racial/Ethnic and Sex Pay Gaps (Using Avg. Monthly Pay)[39]

Subgroup Comparisons		Pay Gap from Report 5102, 2017	Pay Gap from ACS, 2014-16	Mid-point of pay gaps
Lower Paid Subgroup	**Higher Paid Subgroup**			
Pacific Islander Females	White Males	21.2%	51.71%	36.46%
Hispanic Females	White Males	22.8%	46.33%	34.57%
Native American/Alaskan Native Females	White Males	23.9%	43.12%	33.51%
URM Females	White Males	21.88%	41.87%	31.88%
Native American/Alaskan Native Females	Asian Males	24.88%	36.13%	30.51%
Females of Color	White Males	17.27%	38.79%	28.03%
Female Employees	Male Employees	10.84%	27.4%	19.12%
Females of Color	Males of Color	10.49%	26.85%	18.67%
URM Females	White Females	13.20%	21.60%	17.40%
URM Employees	White Employees	13.17%	21.31%	17.24%
URM Males	White Males	12.00%	17.91%	14.96%
Employees of Color	White Employees	8.58%	18.80%	13.69%

Sources: 2017 CalHR Statewide 5102 Report & 2014-2016 ACS

Note: Only full-time year-round employees were included from the ACS. [40]

Although the midpoint pay gaps listed in Table 5 are a better indicator than the ACS or Report 5102 alone of actual racial/ethnic and sex pay gaps, this research posits that these midpoint estimates are still likely conservative estimates. Considering that ACS pay gap(s) (Table 3) were closer than Report 5102 (Table 2) to CalHR's 2014 reported figures, selecting the midpoint between the ACS and Report 5102 should in theory yield a more conservative estimate. Again, this would only be the case if racial/ethnic stratification follows a similar pattern as gender stratification in the State.

Pacific Islanders and Some Asian Subgroups: Pay Disparities

This report concentrates on inequalities facing underrepresented minorities (URM), Blacks, American Indians/Alaska Natives, and Hispanic/Latinos, due to the systematic marginalization these groups have encountered throughout U.S. history. As noted, URM is a widespread term used across organizations and research. For example, it is often used within higher education to identify and support underrepresented students as part of admittance, access, and retention efforts. However, it is important to note that URM has not historically included other underrepresented racial/ethnic subgroups such as Pacific Islanders and some ancestral groups

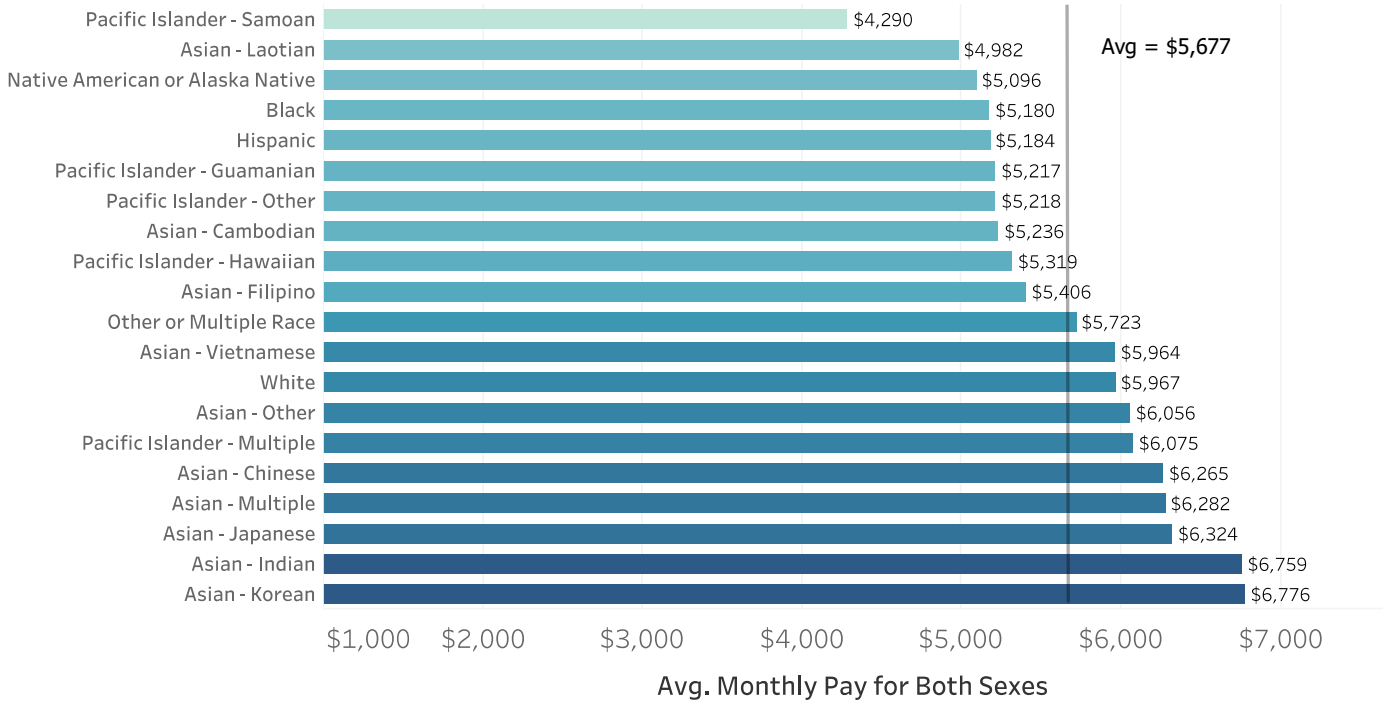
[39] See Appendix D for average monthly pay estimates by race/ethnicity and sex used to derive pay gaps displayed in Table 5.

[40] When calculating raw pay gaps, the ACS sample was restricted to full-time year-round employees. Without controlling for part-time and seasonal employees, this report would likely be overestimating pay gaps relative to Report 5102 because standardizing pay in Report 5102 means all employees are on a full-time year-round pay schedule within that data set.

within the broader Asian American community. Often, Pacific Islanders grouped with the larger Asian American community despite historical and current differences.[41]

However, as shown in Table 4 and Figure 4, some Pacific Islander and Asian subgroups face rather significant pay disparities in California's civil service. In fact, after disaggregating Pacific Islanders and Asians, this research finds that Samoans and Laotians are the lowest paid subgroups in the State. Recognizing this, it is essential that future research and policy strategies consider the unique challenges and experiences facing various subpopulations. These findings also illustrate the value of disaggregated data, a key takeaway from this research.

Figure 4: Average Monthly Pay by Disaggregated Racial/Ethnic Subgroups



Source: 2017 CalHR Statewide 5102

Note: The sample size for "Pacific Islander – Multiple" is only 34 (Appendix A), the only subgroup in which there are fewer than 100 employees.

Data Analysis Part 2: Factors Contributing to Pay Inequity

One of the key drivers of this project is the desire to understand why there is lack of pay parity in California's civil service. This information is important in order to develop strategies to mitigate and remedy these inequities. This section offers insight into both categorical influences and measurable variables underpinning inequities (such as minorities being overrepresented in

[41] Census Data and API identities. Asian Pacific Institute on Gender-Based Violence. https://www.api-gbv.org/resources/census-data-api-identities/.

lower paying occupations) as well as more complex and nuanced causal factors leading to disparities.

Inequities such as pay gaps are often delineated into "explained" or "unexplained" differences (also known as the Oaxaca-Blinder Decomposition).[42,43] Explained factors include variation in labor market characteristics (e.g., education and occupation) and work experience (e.g., tenure and skills) of a subpopulation. In essence, these are quantifiable variables which correlate with pay, and should in theory fully explain pay differences. Unexplained differences, on the other hand, are the proportion of pay gaps which remain even after controlling for these concrete measurable factors. Researchers such as Harvard economist Claudia Goldin hypothesize and have demonstrated through pay gap analyses that biases and discrimination in the workforce are often at the core of these unexplained differences.[44]

This study is unable to approximate unexplained portions of racial/ethnic pay gaps in State civil service due to the use of variables from multiple data sets. As noted in the future research section below, it is thus crucial that subsequent research measure the share of pay gaps which are explainable vs. unexplainable, recognizing that explained differences (such as concentration across occupations) are also critical to address and suggest systemic inequity.

The following sections, do however, examine several measurable variables of interest including:

- Part-time and seasonal employment: This report leverages data on hours per week and weeks per year worked from the ACS to investigate effects of part-time vs. full-time and seasonal vs. year-round employment by race/ethnicity.
- Occupation and supervisory roles: Through Report 5102, this research collects and analyzes information on employee occupation and whether an employee holds a supervisor position.
- Educational attainment: Self-reported information on educational attainment from the ACS is used to control for education as an important predictor of pay.

Part-Time and Seasonal Employment

Results from data analysis part 1 were standardized to a year-round 40-hour work week to allow this research to control for differences in pay impacted solely by the number of hours and weeks worked. At the same time, a major driver of inequity in California state government is that URM and females tend to be overrepresented in part-time and seasonal employee status.

According to the U.S. Census, a year-round full-time worker is defined as a person 16 years of age or older who usually works 35 hours or more per week for 50 to 52 weeks a year. Part-time employees work less than 35 hours a week, and seasonal employees work less than 50 weeks

[42] "Analyzing Health Equity Using Household Survey Data" Owen O'Donnell, Eddy van Doorslaer, Adam Wagstaff and Magnus Lindelow, The World Bank, Washington DC, 2008. http://siteresources.worldbank.org/INTPAH/Resources/Publications/459843-1195594469249/HealthEquityCh12.pdf.
[43] "Using the Oaxaca-Blinder decomposition technique to analyze learning outcomes changes over time: An application to Indonesia's results in PISA mathematics." Policy Research Working Papers. March 2011. http://www.usc.es/economet/journals2/eers/eers1134.pdf.
[44] Carnevale, Anthony P. and Smith, Nicole. "Gender Discrimination Is at the Heart of the Wage Gap." TIME Magazine. May 19, 2014. http://time.com/105292/gender-wage-gap/.

a year. Using ACS data, table 6 approximates what percentage of various demographic groups in the State's Civil Service are employed full-time year-round, part-time year-round, seasonal year-round, or part-time seasonal. As a point of reference, part-time and seasonal employees make only 20% of full-time year-round employees on average ($13,427.80 vs. $65,771.30 annually).[45]

Table 6: Breakdown of Part-time and Seasonal Employees

Subgroup	Part-time & Year-round	Seasonal & Full-time	Part-time & Seasonal	Full-time & Year-round
All Employees	12.04%	5.05%	3.43%	79.47%
Female Employees	17.02%	4.90%	4.17%	73.9%
Male Employees	5.93%	5.23%	2.51%	86.33%
White Employees	9.14%	4.17%	3.35%	83.34%
White Female Employees	13.36%	4.16%	4.52%	77.97%
White Male Employees	4.91%	4.18%	2.18%	88.73%
Employees of Color	14.14%	5.69%	3.48%	76.67%
Female of Color Employees	19.27%	5.36%	3.97%	71.4%
Male of Color Employees	6.82%	6.16%	2.8%	84.23%
URM Employees	13.85%	5.58%	3.18%	77.38%
URM Female Employees	19.59%	5.12%	3.92%	71.37%
URM Male Employees	5.77%	6.24%	2.14%	85.85%

Source: 2014-2016 ACS

Note: This is an approximation based on sample data in the ACS.

Table 6 demonstrates that inequalities are most pronounced along gender lines; males have a 14-20% greater likelihood than females of holding full-time year-round roles. Consistent with other trends, the disparity increases when factoring in both race/ethnicity and sex. Approximately 89% of White male employees are full-time year-round, whereas only 71% of females of color are employed in full-time year-round roles.

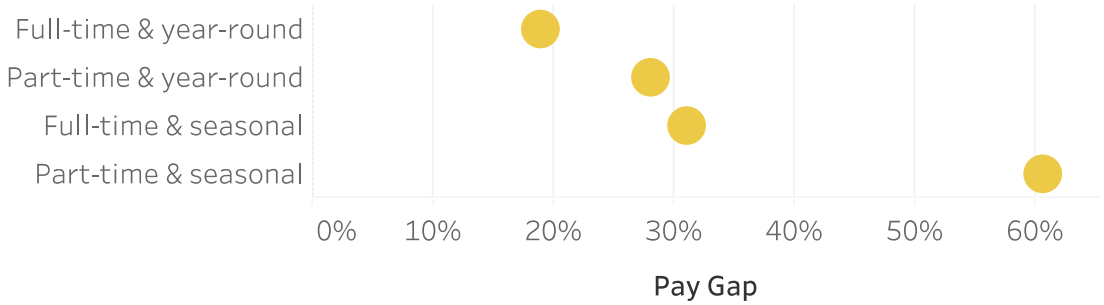
23% of females of color are employed only part-time

Notably, nearly a quarter of females of color and URM females are in positions which serve 35 hours or less a week. This fraction is 28% greater than the share of White females in part-time roles, 48% larger than males of color, and 64% greater than the portion of White males employed part-time.

In addition to analyzing the distribution of demographic groups across more regular versus irregular work, this study also looks at the pay gap between White employees and employees of color who occupy seasonal and part-time roles (Figure 5). Considering that the racial/ethnic pay gap among full-time and year-round employees is 18.8% in the ACS, the trend in Figure 5 suggests that pay disparities grow when moving from more to less permanent and stable work in the State. For instance, the pay gap between White employees and employees of color who work part-time for less than 50 weeks a year is considerable at 60%.

[45] Source: 2014-2016 ACS.

Figure 5: Pay Gaps Between White Employees and Employees of Color by Part-time and Seasonal Status[46]



Source: 2014-2016 ACS

The above pay gaps do not control for the exact number of hours and weeks worked per year by employees (e.g., within the part-time full-year category, there are employees who work 10 hours a week and employees who work 34 hours a week). Additional research could make subgroup comparisons within more similar ranges, or could calculate average hourly wages given the number of hours and weeks worked for each respondent. Furthermore, it is possible that within these groups, employees hold completely different classification types, with White employees being more likely to be employed in higher paying part-time or seasonal work, such as consultant positions. Future analyses could explore the type of intermittent/part-time employment various racial/ethnic and gender groups typically occupy.

Representation Across Occupations

In California's civil service, some occupations pay more than others (Table 7 and Appendix J). Management occupations, legal occupations, architecture and engineering occupations, community and social service occupations, and computer and mathematical occupations are the highest compensated occupations. Personal care and service occupations, farming, fishing, and forestry occupations, and building and grounds cleaning and maintenance occupations rank as the lowest paid. In the middle are occupations such business and financial operations occupations.

White employees and males are overrepresented in the top quintile (top 20%), or highest paying, occupational groups (Table 8). URM employees, and URM males in particular, are disproportionately overrepresented in the lowest paying quintile. URM employees make up 35% of the civil service, but 45% of the lowest quintile, a difference of 28%. URM females are overrepresented in the lowest and second lowest paid occupations – unlike White females, White males, females of color as a whole, males of color as a whole, and URM males – meaning they are particularly concentrated in low paying jobs.

[46]Full-time year-round pay gap calculated from values in Appendix D. See Appendix I for average pay values used to calculate racial/ethnic pay gaps among part-time year-round employees, seasonal full-time employees, and part-time seasonal employees.

Females and females of color in aggregate are underrepresented in the lowest paid occupational quintile. This is likely a result of the fact that women have been historically underrepresented in manual and physical labor occupations, which rank as some of the lowest paid occupations in State government. An intriguing finding is that females are highly overrepresented within the second lowest paid occupational group. This is largely attributable to the fact that 75% of office and administrative support employees (15% of the civil service) are female.

Table 7: Occupational Groups by Pay Quintile

Quintile	Occupational Groups Per Quintile (Lowest to Highest Paid)	Avg. Monthly Pay
Lowest Paid Quintile	• Building and Grounds Cleaning and Maintenance Occupations • Other Occupations (listed blank in Report 5102)[47] • Farming, Fishing, and Forestry Occupations • Personal Care and Service Occupations	$2,948.99
2nd Lowest Paid Quintile	• Food Preparation and Serving Related Occupations • Healthcare Support Occupations • Office and Administrative Support Occupations • Transportation and, Material Moving Occupations	$3,588.11
Middle Quintile	• Construction and Extraction Occupations • Installation, Maintenance, and Repair Occupations • Sales and Related Occupations • Arts, Design, Entertainment, Sports, and Media Occupations • Business and Financial Operations Occupations	$5,055.81
2nd Highest Paid Quintile	• Protective Service Occupations • Production Occupations • Life, Physical, and Social Science Occupations • Healthcare Practitioners and Technical Occupations • Education, Training, and Library Occupations	$6,197.23
Highest Paid Quintile	• Computer and Mathematical Occupations • Community and Social Service Occupations • Architecture and Engineering Occupations • Legal Occupations • Management Occupations	$8,207.96

Source: 2017 CalHR Statewide 5102 Report

[47] Classifications which do not neatly categorize within occupational group types are listed under the “Other Occupations” category. Roughly 3,500 of the state’s workforce are in classifications that are not officially designated – 9.6% of these employees are Asian, 9% are Black, 24% are Hispanic, 1% are Native American or Alaskan Native, 3% are Other, 1% are Pacific Islander, and 53% identify as White. From Seasonal Agricultural Aide to Special Consultant, these classifications can differ quite substantively in their duties.

Table 8: Representation of Demographic Subgroups Across Occupational Group Quintiles

Overrepresentation
Underrepresentation

Occupational Group Quintiles	White	POC	Female	Male	Females of Color	Males of Color	URM	URM Female	URM Male	Total N
Lowest Paid Quintile	40.92%	59.08%	41.96%	58.04%	23.93%	35.15%	45.26%	18.15%	27.1%	7,667
2nd Lowest Paid Quintile	33.52%	66.48%	70.87%	29.13%	47.42%	19.05%	47.16%	34.48%	12.67%	37,767
Middle Quintile	43.36%	56.64%	56.06%	43.94%	33.57%	22.07%	32.05%	18.10%	13.94%	55,059
2nd Highest Paid Quintile	46.70%	53.30%	31.38%	68.62%	18.68%	34.62%	37.15%	11.32%	25.83%	75,615
Highest Paid Quintile	47.27%	52.73%	37.43%	62.57%	20.35%	32.38%	22.63%	9.69%	12.94%	38,647
Group as Share of State Employees	43.42%	56.58%	46.12%	53.88%	28.04%	28.54%	35.28%	17.08%	18.20%	100%

Source: 2017 CalHR Statewide 5102 Report
Note: N = Number of employees

Supervisors and Rank and File

This report also examines pay disparities among employees who are categorized as supervisors (or managers) versus rank and file. Table 9 demonstrates what percentage of these positions various racial/ethnic groups make up. Of jobs that are supervisory or managerial in nature, 50% of them are held by White employees even though White employees comprise only 43% of all State jobs.

Table 9: Distribution of Race/Ethnicities Among Rank and File vs. Supervisor Classifications[48]

Race/Ethnicity	Percent of State Civil Service	Percent of State Rank and File	Percent of State Supervisors
Asian	17.40%	17.82%	14.24%
Black	9.79%	9.82%	9.64%
Hispanic	24.85%	25.35%	21.09%
Native American or Alaska Native	0.63%	0.64%	0.56%
Other or Multiple Race	3.19%	3.18%	3.25%
Pacific Islander	0.72%	0.71%	0.69%
White	43.42%	42.49%	50.52%

Source: CalHR Statewide 5102 Report 2017

[48] Racial/ethnic and sex distribution across rank and file and supervisor classes available in Appendix L.

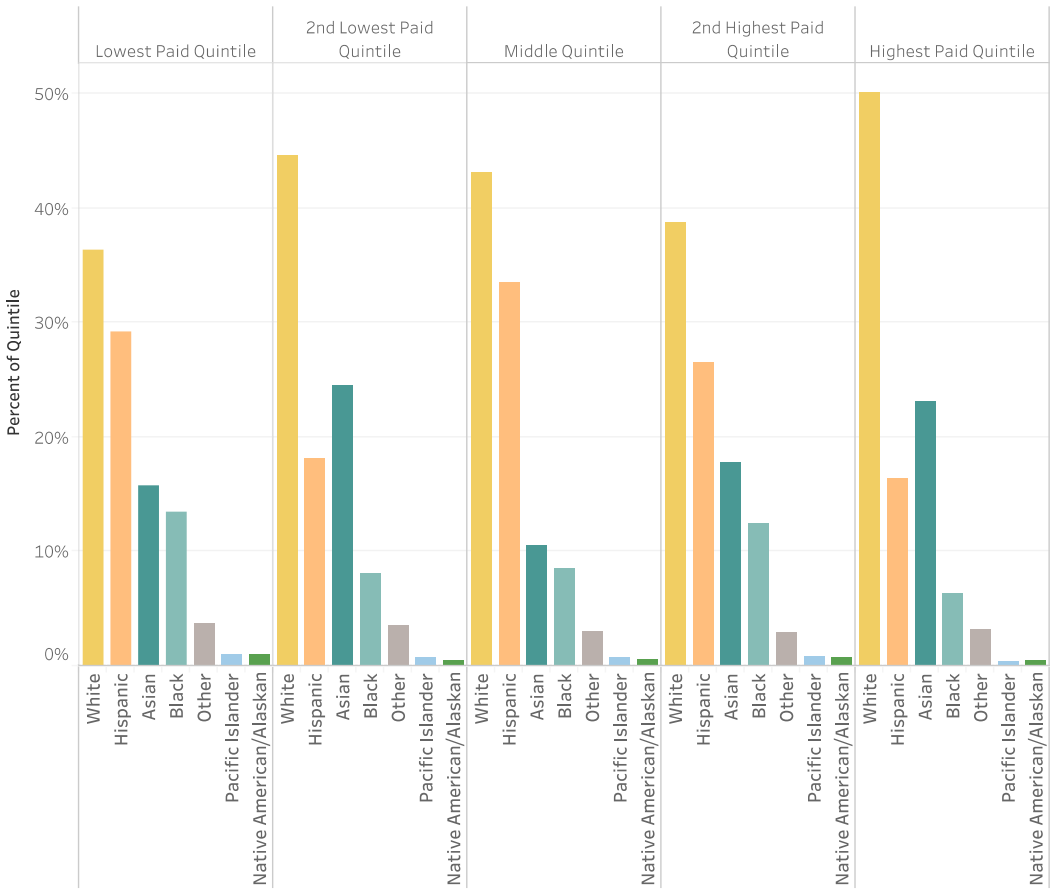
Moreover, when going from rank and file to supervisor positions, inequality widens between URM and White employees. Results show that URM rank and file make 11.53% less than White rank and file, but URM supervisors make 16.32% less than White counterparts (Appendix M).

Pay gaps widen from rank and file to supervisor positions

This analysis also sorted rank and file classifications and supervisor classifications into quintiles of pay (the highest paid quintile of supervisors includes the top 20% paid supervisors based on Report 5102).

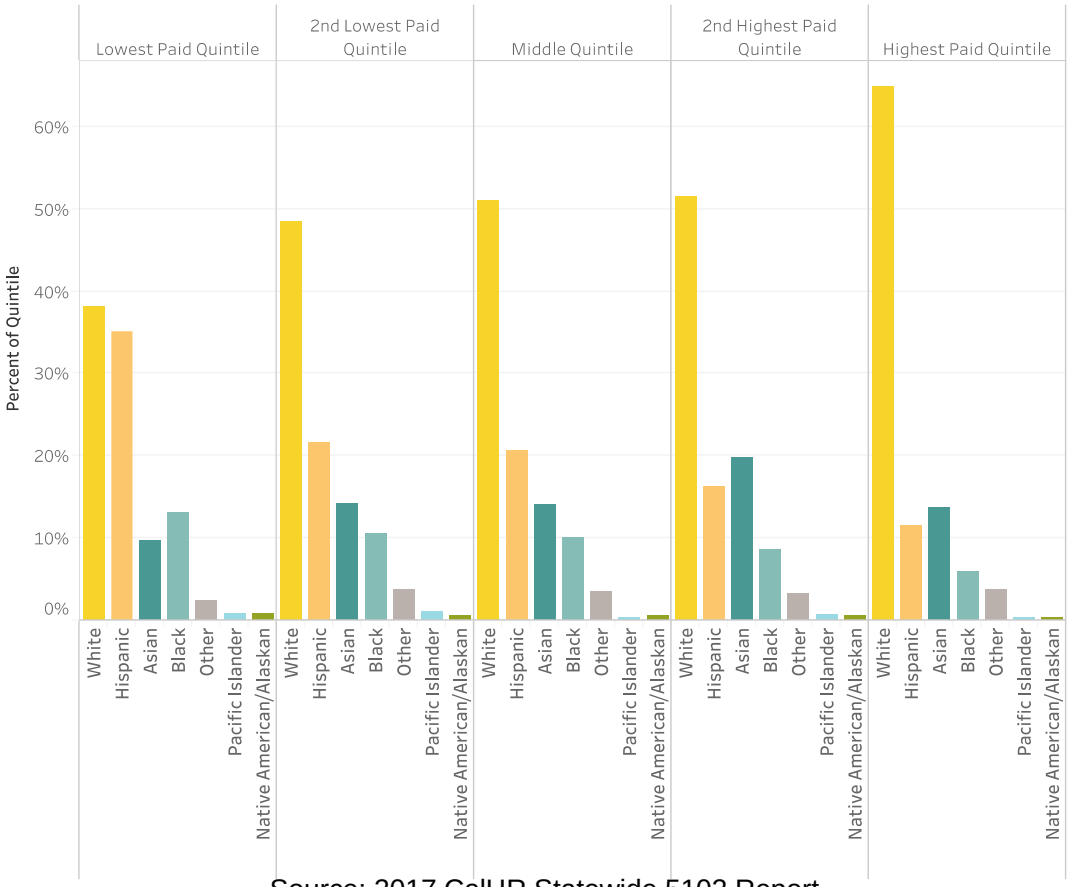
Although some minorities are equally represented across rank and file and supervisor positions, such as Black employees (Table 9), they tend to be concentrated in lower paying supervisor roles (Figures 6 and 7). White employees as a proportion of rank and file and supervisor quintiles grows considerably when moving from lower paid quintiles to higher paid quintiles. For example, White employees comprise 38% of the lowest paid supervisor positions, but 66% of the highest paid supervisor positions.

Figure 6: Distribution of Racial/Ethnic Groups Across Rank and File Pay Quintiles



Source: 2017 CalHR Statewide 5102 Report

Figure 7. Distribution of Racial/Ethnic Groups Across Supervisor Pay Quintiles



Source: 2017 CalHR Statewide 5102 Report

Black Employees: Equal Representation but Inequitable Distribution

Black employees are one of the few racial/ethnic groups which are rather equally represented between rank and file and supervisor positions (Table 9); they constitute 9.82% of rank and file, 9.64% of supervisor roles, and 9.79% of the State's civil service. Uniquely, Black employees are also overrepresented in State government when compared to the general California population (6.5%).[49]

These trends are likely an outcome of a rich history across the public sector of recruiting and retaining Black employees. Previous research illustrates that Black workers in the U.S. are 30% more likely than other groups to be government workers, and that the public sector is a major source – if not the most important source– of jobs for Black communities in America.[50]

[49] United States Census Bureau QuickFacts: California. https://www.census.gov/quickfacts/CA. Accessed May 5, 2018.
[50] Madrigal, Alexis C. *How Automation Could Worsen Racial Inequality.* The Atlantic. January 16, 2018. https://www.theatlantic.com/technology/archive/2018/01/black-workers-and-the-driverless-bus/550535/.

Positive on the whole, the story becomes more complicated when looking at the distribution of Black employees across quintiles of pay. Black employees are much more likely to be in lower paying quintiles than higher paying quintiles. They represent 13% of the lowest paid supervisor quintile, but only 5.8% of the highest paid supervisor quintile.

As discussed in this paper's future research section, the State could draw from this case and consider building a similarly strong pipeline for other people of color, while also investing in interventions that could help groups such as Black employees move up the pay ladder.

Educational Attainment

Existing literature is fairly conclusive that education is positively correlated with salary/wages, in that earnings increase as an individual achieves higher levels of educational attainment.[51] To assess to what extent the difference in pay by gender and race is due to inequalities in educational attainment as opposed to other factors, this report used the ACS to control for education. If all other factors are equal, it is expected that subpopulations with similar degree levels would receive comparable pay.

The ACS provides detailed information about the educational attainment of respondents. This analysis uses the "educd" variable in the ACS, which discloses the highest level of educational attainment of an individual (see Appendix N for more information on "educd").

Table 10 exhibits the average monthly pay of White employees versus employees of color by sex, controlling for attainment of a bachelor's and/or graduate degree.[52] The differences in pay by race/ethnicity are stark even after controlling for education. For example, females of color without a degree receive 58% of what White males without a degree receive. Similarly, females of color with a degree are paid 69% of White males with a degree. It appears that on the whole, education narrows the gap in pay inequity, but only slightly. One of the most important findings from Table 10 is that White males without any higher education degree receive higher average pay than females of color with a degree.

[51] Tamborini, Christopher R., ChangHwan Kim, and Arthur Sakamoto. "Education and Lifetime Earnings in the United States." *Demography* 52.4 (2015): 1383–1407. *PMC*. Web. 3 May 2018.

[52] Looking at the "p-value" column in Table 10, the coefficients on females of color (both with or without a degree) are statistically insignificant. Given the sufficient sample sizes, the insignificant p-values are unlikely a result of not having enough data points. Instead, they may be due to the wide spread of pay among people of color (which findings from Report 5102 point to) and the fact that there may be large amounts of pay variation even between those with degrees (e.g., the economic returns on a bachelor's vs. a master's).

Table 10: Average Monthly Pay Between White Employees and Employees of Color, Controlling for Higher Education Degree (Full-time year-round employees only)

Subgroup	Avg. Monthly Pay	% of White Male Pay in Educational Group[53]	P-Value	N
Without Higher Ed Degree				
White Males	$6,125.50	-	0.000	810
White Females	$4,149.65	67.74%	0.000	654
Males of Color	$5,282.14	86.23%	0.000	764
Females of Color	$3,569.77	58.28%	0.241	1033
With Higher Ed Degree				
White Males	$8,103.72	-	0.000	635
White Females	$6,369.95	78.61%	0.467	566
Males of Color	$6,722.12	82.95%	0.095	562
Females of Color	$5,558.11	68.59%	0.464	625

Source: 2014-2016 ACS

Note: Degree denotes a bachelor's or graduate degree including master's, PhD, etc.

Next, employees of color were disaggregated to reveal differences in pay by racial/ethnic group. Table 11 shows that White employees continue to have the highest pay for their level of educational attainment. Interestingly, for some subgroups, pay gaps decrease as educational attainment increases. Black employees without a bachelor's degree or higher make 14% less than what their White counterparts make, but this inequality shrinks by five percentage points when comparing Black employees and White employees with degrees (though the coefficient on Black employees with degrees is not statistically significant). Contrastingly, the pay gap between Hispanic employees and White employees increases as educational attainment increases; growing from 17% to 21%.

To elicit differences in pay among those with bachelor's versus graduate degrees – between which there are likely significant differences in return on investment – this analysis next disaggregated racial/ethnic groups by three levels of educational attainment: less than bachelor's (including high school degree, GED, and associates), bachelor's degree only, and master's degree or other graduate degree including doctoral programs.[54] Estimates at this more granular level are more statistically significant, substantiating theories (footnote 49) behind why some subgroups' pay in Tables 9 and 10 did not have significant coefficients (See Appendix P for p-values).

[53] White males were selected as a reference point because they are the highest paid subgroup across both educational attainment levels.

[54] Sample sizes of respondents with less than HS degree or GED, some college or associates degree, or PhD alone were too small to isolate as independent groups.

Table 11: Average Monthly Pay of Race/Ethnicities, Controlling for Higher Education Degree (Full-time year-round employees only)

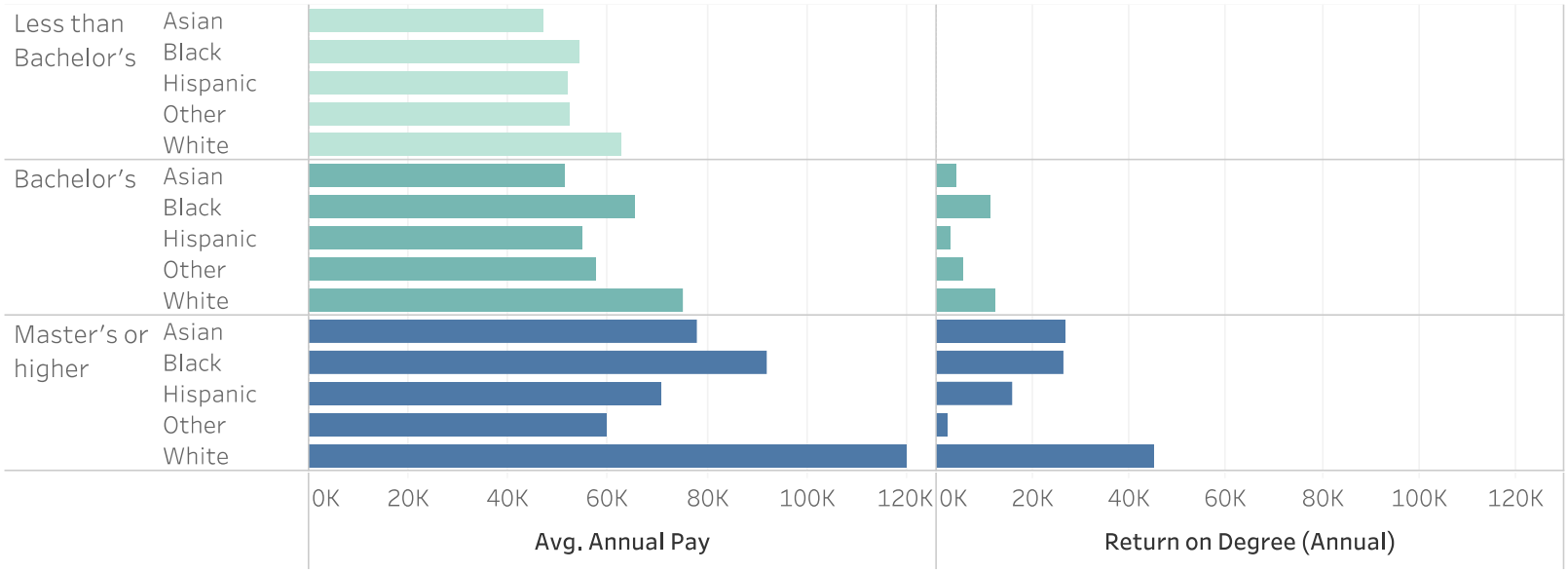
Subgroup	Avg. Monthly Pay	% of White Pay in Educational Group	P-Value	N
Without Higher Ed Degree				
Asian	$3,925.10	25%	.000	282
Black	$4,524.61	14%	.002	372
Hispanic	$4,338.17	17%	.000	1056
Other*	$4,355.90	17%	.033	87
White	$5,228.66	-	.000	1464
With Higher Ed Degree				
Asian	$6,219.96	14%	.342	597
Black	$6,594.40	9%	.925	189
Hispanic	$5,725.41	21%	.014	367
Other*	$5,606.15	23%	.212	34
White	$7,260.90	-	.000	1201

*Other: Native American/Alaskan Native, Pacific Islanders, and Other or Bi/ Multi-Racial[55]

Note: Degree denotes bachelor's degree or any graduate degree including master's, PhD, etc.

Source: 2014-2016 ACS

Figure 8: Average Annual Pay by Race/Ethnicity and Educational Attainment Level and Return on Educational Attainment by Degree (Full-time year-round employees only)



Source: 2014-2016 ACS

**Other: Native American/Alaskan Native, Pacific Islanders, and Other/Bi or Multi-Racial*

[55] Native American/Alaska Natives, Pacific Islanders, and employees who identified as "Other or Multiple race" were combined as sample sizes for these groups were in the single or low double digits. This research acknowledges that it is not ideal to collapse these groups since evidence illustrates they are dissimilar in many regards.

Figure 8 demonstrates that pay disparity persists among employees with similar educational attainment levels. For some groups, income equality worsens as educational attainment increases. Hispanics with less than a bachelor's (i.e. associates, some college, or high school degree or less) make 16% less than Whites with similar levels of education attainment – however this pay disparity increases to 27% when comparing Hispanics and Whites who have bachelor's degrees and 41% between those who have a graduate degree. Given that the overall pay gap between full-time and year-round Hispanic employees and White employees in the ACS is 24%, this means that education only explains a percentage of the pay gap among the least educated group.

The latter column in Figure 8 (labeled "Return on Degrees"), shows that there is also lack of parity in terms of returns on education. Each bar indicates the returns on that degree from one level of educational attainment lower. For example, the return on Black individuals having obtained a graduate education is approximately $26,000 per year while the return for White individuals is $46,000 annually.

The ACS is a rich source of educational information and could be utilized in the future to continue to analyze and assess drivers of difference in pay. Additional analysis could include controlling for exact type of graduate degree (such as Juris Doctor degree versus master's) to factor in differing returns on investment. Similar analysis could also be conducted controlling for occupation in addition to education. Occupations will likely help to explain some, but not all, of the remaining pay disparities noted in this section. Controlling for supervisor status and service months is also optimal as pay is likely positively related with these two variables; however, this data is not reported in the ACS.

Data Analysis Part 3: Comparing Pay Gaps to the Federal Civil Service & California's Private Sector

CalHR's 2014 Gender Pay Report found that women in California's civil service experience a larger pay gap compared to women in California's private sector and the federal civil service.[56]

This research also compares racial/ethnic pay disparities in the State's civil service with pay gaps in the federal civil service and California's private sector. It restricts the federal civil service sample to include only federal employees residing in California to reconcile differences in pay by geography.

Analysis finds that akin to the gender pay gap, the racial/ethnic pay gap between White employees and employees of color in the State's civil service is greater than the federal civil service pay gap (Table 12). The State's civil service gap is 18.80% whereas the federal civil service pay gap is 16.42%. Unlike Gender Pay Report findings, the racial/ethnic pay gap in California's private sector (42.12%) is more significant than that of California's civil service.

[56] 2014 Report on Women's Earnings in California State Civil Service Classifications. California Department of Human Resources. October 2016.

The larger pay gap in California's private sector may be generated in some part because the sector is less educated than the State and federal workforce – 47% of federal employees, 36% of State civil service employees, and just 29% of the State's private sector employees have a higher education degree (ACS 2014-2016).

Table 12: Pay Gaps Between White Employees and Employees of Color (Full-time year-round employees only)

Educational attainment level	CA State Civil Service	Federal Civil Service in CA	Private Sector in CA
Any (all employees)	18.80%	16.42%	42.12%
Less than bachelor's	17.32%	11.74%	37.53%
Bachelor's	9.71%	12.07%	28.27%
Master's or higher (graduate degree)	20.13%	8.86%	18.72%

Source: 2014-2016 ACS

Note: CA Civil Service N = 7,134, Federal Civil Service in CA N = 4,230, CA Private Sector N = 224,026

Even after controlling for educational attainment, however, trends remained similar. Among educational attainment levels, the federal civil service racial/ethnic pay gap tended to be smaller and the California private sector gap tended to be larger than the State's civil service. There were exceptions among two groups: 1) federal employees who had a bachelor's degree (the pay gap was larger among federal employees than California civil service employees in this educational group) and 2) private sector employees with a graduate degree (among those with graduate degrees, the private sector had a smaller racial/ethnic pay disparity than the State's civil service).

Recommendations for Advancing Pay Parity

These recommendations are based on the author's experience working with the data, as well as interviews with internal and external stakeholders. The recommendations fall into three categories:

A. Recommendations for the GARE Capitol Cohort and its participating member departments
B. Recommendations to increase transparency and accessibility of data
C. Recommendations of opportunities to enhance and expand workforce development strategies to increase pay parity for the larger enterprise of State government

Category A: Recommendations for the GARE Capitol Cohort and its participating member departments

The impetus of this project was to provide departments participating in the GARE Capitol Cohort with a detailed data analysis of workforce diversity (e.g., racial/ethnic diversity in leadership

versus rank and file positions) and racial and gender pay parity in order to enable GARE Capitol Cohort teams to develop intentional and targeted interventions to address inequities. Recommendations 1-3 support strengthening the impact of the GARE Capitol Cohort and its participating departments.

Recommendation 1: Analyze race and gender pay equity for each participating GARE Capitol Cohort department using disaggregated data

The current report provides race/ethnicity and gender pay analysis for the whole of State government, which includes all departments taking part in the GARE Capitol Cohort. Therefore, the trends presented in this report are likely reflective of trends found in individual participating departments.

However, there are likely differences related to diversity and pay parity between individual departments. For example, infrastructure-related departments employ more engineers than those in the human services. Engineers, as a classification, tend to be more male and are one of the higher paying classifications, which may result in higher gender pay inequities for infrastructure-related departments.

The statistical code for individual department-level analysis has been developed, with input from research scientists at the Departments of Public Health and Corrections and Rehabilitation, in addition to Professor Steven Raphael at the University of California, Berkeley. This statistical code is available to any California department interested in analyzing their data. As of July 2018, three departments have used the methodology and code to analyze their department's disaggregated data.

Recommendation 2: Incorporate CalHR workforce development and planning information into the GARE Capitol Cohort training curriculum

As part of the Capitol Cohort, member departments are working to take a systematic approach to advancing racial equity. GARE has partnered with the HiAP Task Force to provide racial equity training and experiential learning to the 170 state employees in the program. These staff are receiving tools to analyze their institutional practices, and are drafting Racial Equity Action Plans for their respective organizations. Many Capitol Cohort participants are not Human Resources (HR) staff, and may not be fully aware of the opportunities and resources provided by CalHR for workforce development and planning. As participants would benefit from learning more about these opportunities and resources, this research recommends that:

a. Information about CalHR's workforce and succession planning processes be incorporated into the GARE Capitol Cohort curriculum, and that
b. GARE team members are encouraged to participate in these processes within their own organizations.

Recommendation 3: Integrate racial and gender pay equity analysis into departmental GARE Racial Equity Action Plans

Participating GARE Capitol Cohort departments have each committed to developing organizational Racial Equity Action Plans. These departments should integrate racial and gender pay equity data analysis (e.g., from the code proposed in Recommendation 1) into those plans, and should use this data to inform measurable goals and actions for those plans. They can also use this data to support other workforce development and planning processes that they participate in, in partnership with CalHR (discussed below).

Category B: Recommendations to increase transparency, applicability, and accessibility of data

Data is critical to understanding the scope and nature of inequities – and to identifying steps that can be taken to advance a more equitable work environment. The California Government Operations Agency (GovOps) and CalHR have made significant strides improving data accessibility in recent years, such as transferring publicly available information from .pdf documents into more user-friendly formats such as Excel. Recommendations 4-6 suggest opportunities to continue increasing transparency and accessibility of data in order to aid in further understanding the underlying causes of racial pay inequities and enhance mechanisms to track and report progress.

Currently, CalHR's Office of Civil Rights regularly analyzes workforce composition, women's earnings, and State and department-level demographics as part of reporting requirements for the Equal Employment Opportunity (EEO) Act and the U.S. Census.[57] Recommendations from Category B are intended to augment these functions, and also to broaden the nature and quantity of data resources available to the public and to help to fill in gaps from this research. Implementing the recommendations below would provide the public and stakeholders better insight into the State's most pressing racial and gender inequities and what can be done about these them, enabling California to continue to serve as a national example in building a more inclusive workforce.

Recommendation 4: Update Questionnaire 1070 to include more racial and gender options

This paper identifies several potential changes to Questionnaire 1070, the State's employee race/ethnicity form, that would increase its usefulness for identifying inequities and tracking progress. The information below can also be collected from other employee surveys or forms, depending upon the feasibility and utility of incorporating these modifications into 1070.

[57] California Department of Human Resources. CalHR Office of Civil Rights overview, http://www.calhr.ca.gov/state-hr-professionals/Pages/ocr-description.aspx. Retrieved online July 8, 2018.

a. Allow employees to select multiple racial/ethnic categories: Currently, employees are unable to select multiple racial/ethnic options on form 1070. The only exception is for employees who identify as Hispanic or Latino; these employees can select "Hispanic or Latino" alone or in combination with any other race.
    - Per AB 532 of 2015, the State will be required to make this change by 2022. AB 532 also presents an opportunity to take a coordinated holistic look at Form 1070 while systems are being transitioned to integrate this option.
b. Incorporate additional racial/ethnic categories including disaggregating Hispanic or Latino and Black or African American groups and including a "Middle East/North Africa" descent category: Disaggregated data of Asian and Pacific Islanders can reveal complex intra-group trends not evident in aggregated data. As of May 2018, Asians and Pacific Islanders are the only racial/ethnic groups for which disaggregated ancestral data is collected. It may also be important to disaggregate Hispanic or Latino and Black or African American groups because there is tremendous ancestral and generational diversity of experiences within those groups.[58,59] Additionally, Middle East/North African individuals have historically been categorized as "White" on demographic surveys, but communities and researchers alike emphasize the importance of disaggregating Middle East/North Africa from the "White" category.[60]
c. Collect gender identity in addition to or instead of sex: People are discriminated against on the basis of gender and gender identity, including transgender identity, therefore it is important to collect data on gender and gender identity, in addition to sex. Expanding these options will also provide more disaggregated data, allowing the State to better discern which employees are impacted and more precisely target equitable workforce development policies.

Recommendation 5: Track and document self-reported data from Questionnaire 1070

To improve confidence in the analysis provided, the author recommends the following changes to Report 5102:

a. Identify and include the percent or number of self-reported records by race/ethnicity and sex in Report 5102.

Civil service employee race/ethnicity and sex information is voluntarily reported by new/rehired employees through Questionnaire 1070 at the time of their onboarding (for a copy of Form 1070, see Appendix R).[61] If an employee chooses not to provide this information, the HR unit for

[58] Logan, John R. and Deane, Glenn. *Black Diversity in Metropolitan America.* Lewis Mumford Center for Comparative Urban and Regional Research at the University at Albany. August 15, 2003. http://mumford.albany.edu/census/BlackWhite/BlackDiversityReport/Black_Diversity_final.pdf
[59] Lopez, Mark Hugo; Gonzalez-Barrera, Ana; Cuddington, Danielle. Diverse Origins: The Nation's 14 Largest Hispanic-Origin Groups. Pew Research Center. June 19, 2013. http://www.pewhispanic.org/2013/06/19/diverse-origins-the-nations-14-largest-hispanic-origin-groups/.
[60] Krogstad, Jens Manual. Census Bureau explores new Middle East/North Africa ethnic category. Pew Research Center. March 24, 2014. http://www.pewresearch.org/fact-tank/2014/03/24/census-bureau-explores-new-middle-eastnorth-africa-ethnic-category/.
[61] State Employee Race/Ethnicity Questionnaire (Form 1070). California Department of Human Resources. http://www.calhr.ca.gov/documents/calhr-1070.pdf.

the respective agency/department is required to visually identify the race/ethnicity and sex of the employee. According to CalHR's Office of Civil Rights staff, most employees self-report their information on Form 1070, especially since the form notifies employees that "if [they] choose not to identify, the department is required to visually identify under federal law." However, there are no definitive records of how many people self-report, which introduces uncertainty as to the data accuracy from Report 5102.[62] It is standard practice in most survey methodology to report the number of "non-respondents." This practice helps researchers and readers assess the representativeness of the data.

Recommendation 6: Enhance accessibility of publicly available data

While Report 5102 is an important resource, analyzing the data requires reorganizing the Excel sheet and coding it so it can be analyzed and linked with pay. For this project, cleaning and coding the data took over 40 hours of staff time. The author suggests several steps in order to enhance the accessibility and user-friendliness of publicly-available data for future analyses:

a. Make additional public documents (such as classification pay scale ranges) available online in Excel with abbreviations, acronyms, and footnotes clearly defined.
b. Consider additional ways to present data to help facilitate easier analysis by external partners. For example, consider preparing Report 5102 and others to be viewable at the observation level (each employee is its own row).
    - This sub-recommendation does not propose the release of any new employee information, generating concerns over employee privacy. Instead, it recommends the State reorganize how Report 5102 and other reports are presented and publish these versions in addition to, or in place of, current online versions. From an analysis perspective, having each employee as its own row allows one to more readily measure patterns across groups. See Appendix S for an example.
c. Distinguish which classifications are rank and file and which are supervisors or managers on Report 5102, or advertise Civil Service Pay Scale document's Collective Bargaining Identifier (CBID) codes as resource on Report 5102 and define codes.
d. Publish data on the number of employees by race/ethnicity and sex within each classification pay subscale (e.g., pay scale A, B, C, etc.).

Category C: Recommendations of opportunities to enhance and expand workforce development strategies to increase pay parity for the larger enterprise of State government

Recommendations 7-9 focus on future opportunities to support and strengthen workforce development strategies to increase pay parity. There are significant opportunities across

[62] At the completion of this analysis (June 2018), CalHR reviewed the data and found that 9.8% of employee race data is non-self-reported. This research recommends that this figure, as well as the percent non-self-reported by race/ethnicity and sex, be highlighted in Report 5102.

California and the nation which can be expanded or leveraged to advance pay parity for all employees, regardless of their race/ethnicity and gender.

Recommendation 7: Learn from existing state and local racial equity initiatives

Public servants, civic leaders, and activists across the U.S. are developing powerful and innovative approaches to tackle racial inequity both inside and outside of government, and these provide new resources and tools that can be integrated into existing work within California government. Recommendations from this component of the research are as follows:

a. The GARE Capitol Cohort should connect participating departments to local counterparts in California, as well as those in other states.
b. CalHR could join and participate in the GARE national network for Human Resources departments.

The Government Alliance on Race and Equity (GARE) is working with nearly 40 jurisdictions in California, and nearly 200 across the U.S. A case worth highlighting is that of Portland, Oregon, a core GARE member. Portland's work to operationalize racial equity in City government began nearly a decade ago.[63] Since then, in 2012, the City established an Office of Equity and Human Rights (OEHR) in order to promote equity and reduce disparities within government and support bureaus in creating methods to assess equitable outcomes. [64] One aspect of OEHR's work has been training City employees in racial equity and helping them understand the racial impacts of their programs and policies. All managers within the City are required to attend a racial equity training. To date, 850 out of 5,000 employees have participated, and it is the City's goal to require all employees to attend a training. [65] The City has also taken a critical look at the civil service, making sure diverse community perspectives are at the hiring table, and creating a mentorship program for women and people of color and an affinity group network.[66] These reforms have, in effect, made racial equity a centralized function of government in Portland.

In addition, GARE coordinates a national network of Human Resources departments that have committed to tackling racial equity within their jurisdictions. The national network fosters sharing of resources, tools, and lessons learned, and could provide valuable support to CalHR and department HR units moving forward.

[63] Local and Government Alliance on Race & Equity, Northwest Core Member, Portland, Oregon. https://www.racialequityalliance.org/jurisdictions/portland-oregon/. Retrieved on July 8, 2018.
[64] Office of Equity and Human Rights. The City of Portland, Oregon. https://www.portlandoregon.gov/oehr/62229. Retrieved March 14, 2018.
[65] Local and Government Alliance on Race & Equity, Northwest Core Member, Portland, Oregon. https://www.racialequityalliance.org/jurisdictions/portland-oregon/. Retrieved on July 8, 2018.
[66] Stakeholder interview with Amalia Alarcon Morris from the Government Alliance on Race and Equity (GARE). March 13, 2018.

Recommendation 8: Bolster racial equity components of existing Upward Mobility, Workforce Development and Planning, and Civil Rights programs at the California Department of Human Resources

Report findings and stakeholder interviews suggest that the following steps can be taken to enhance racial equity components of existing programs at CalHR:

a. Evaluate what components of the Upward Mobility program (described below) have worked best in closing the gender pay gap in recent years. For instance: Which departments have the most robust Upward Mobility programs? What makes certain initiatives more successful than others? Are programs being adequately funded? What lessons from this work can be applied to racial equity?
b. Build off of current CalHR training curriculum, such as State-mandated curriculum on unconscious bias, by incorporating other equity-oriented lessons. These can include training on how to apply a racial equity lens to policies and programs for managers and supervisors.
c. Increase resources for CalHR's Office of Civil Rights and Workforce Development Program in order to enhance racial equity components of data tracking and analysis, managerial training, and workforce development and planning.

The California Department of Human Resources (CalHR) is a key partner for promoting equity in the State's workforce practices. They have a number of initiatives that support civil servants in their training and professional development, and address issues such as an aging workforce and workforce diversity. CalHR's Office of Civil Rights provides assistance to the State's departments and agencies through workforce analysis and annual reporting which supports EEO programs and the work of the Workforce Development Branch.[67] The Workforce Development Branch supports Upward Mobility, Workforce Development, and Workforce Planning.

Upward Mobility: Upward Mobility is a career mobility program within the State's civil service that is designed to provide employees in low-paying occupations training and assistance to advance into higher paying technical, professional, and administration roles.[68] While all department-level Upward Mobility programs target a similar population (employees in low-paying occupations), the scope and resources available within the program varies from department to department within the State.[69]

Upward Mobility is already leveraged as a strategy to address the gender pay gap and lack of career growth for underrepresented groups, and California state government has an opportunity to build off of existing efforts within Upward Mobility to more directly address obstacles facing

[67] Workforce Analysis and Census of Employees. California Dept. of Human Resources. http://www.calhr.ca.gov/state-hr-professionals/Pages/WFA-and-Census.aspx. Retrieved March 15, 2018.
[68] Upward Mobility. California Dept. of Human Resources. http://www.calhr.ca.gov/state-hr-professionals/Pages/Upward-Mobility.aspx. Retrieved March 15, 2018.
[69] Stakeholder interview with Erika Costales from California Department of Human Resources (CalHR) Office of Civil Rights. March 7, 2018.

employees of color and underrepresented minorities. As next steps, the State should consider evaluating what components of the program have worked best in closing the gender pay gap in recent years, and what lessons can be applied to racial equity. This research will be especially informative given the variation in Upward Mobility tactics and breadth from one department to the next, and could support greater consistency across departments.

Workforce Development and Planning: The purpose of CalHR's Workforce Development Branch is to ensure that departments and agencies have the right people in the right jobs at the right time. Many existing tools within the Branch can be bolstered to further advance racial equity. For example, the State has mandated training and professional development requirements that include training on objective and unbiased hiring processes.[70] These requirements could be enhanced by institutionalizing and requiring new training on strategies to apply a racial equity framework both internally within government and across external programs and policies.

Workforce and succession planning are other potential levers of change. According to the CalHR website, workforce planning "is the business process that aligns staffing with the strategic missions and critical needs of the department," and succession planning "involves identifying and developing current employees with the potential to fill key leadership positions, identifying competency gaps, and developing strategies to addressing the needs."[71] As of 2017, every State organization that employs civil servants is required to have a workforce plan and succession plan. Thus, both processes offer exciting prospects to institutionalize questions of concern that have arisen from this project and provoke departments to think more deeply about racial/ethnic diversity, stratification, and upward mobility as part of their regular planning.

Increase Resources: To ensure feasibility and sustainability of the above strategies, additional staffing will be required. Both the Office of Civil Rights and Workforce Development have strong but small teams. The State should pursue funding options to expand CalHR staff capacity in these areas, enabling the department to train or hire team members to comprehensively approach programs with a racial equity lens.

Recommendation 9: Conduct further research to refine the State's understanding of the racial/gender pay gap and its underlying drivers

The author has identified a number of further questions that could be explored to address limitations of this analysis and build off of current findings to address pressing issues surrounding racial inequities in government.

See Future Research Questions below for a discussion of possible directions for additional research in this area, building on the lessons learned from this project.

[70] Stakeholder interview with Sarah Gessler from California Department of Human Resources (CalHR) Statewide Workforce Planning and Recruitment Unit. March 21, 2018.
[71] California Dept. of Human Resources. Statewide Workforce Planning. http://www.calhr.ca.gov/state-hr-professionals/Pages/workforce-planning.aspx. Retrieved July 8, 2018.

Future Research Questions

1. What is the true racial/ethnic pay gap in California's civil service? What portion is "explained"?

This report was able to provide robust estimates of racial/ethnic pay gaps and brought to light a number of consequential trends across the State using publicly available data. However, since Report 5102 used mid-point pay for a classification and the ACS does not ask respondents for job title, this report was unable to dissect whether employees of color and underrepresented employees face inequities in relation to colleagues within the same or similar classifications. In addition, since data on factors which contribute to pay were drawn from two different data sets, this paper did not provide an approximation of the "explained" vs. "unexplained" pay gap.

To answer these questions, future analyses could:

a. Analyze disaggregated employee data which includes demographic information, including race/ethnicity, sex, and age, actual pay from administrative records, and classification for each civil service employee.
    - Control for labor market and work experience variables to obtain an estimate of the "explained" vs. "unexplained" proportion of racial/ethnic and gender pay gaps.
    - Adjust for age to gauge to what degree this explains pay gaps in the State.

b. Examine employee microdata for population of civil service to confirm true pay gaps and resolve the unanswered question of whether there are within-classification disparities in pay.

Even if within-classification differences are minute, or even solely attributable to different entry-level salaries due to higher salary from prior employment,[72] answering this question can provide important nuanced information about the scope and source of the problem. Insight into true pay gaps and explainable determinants will also allow the State to plan appropriately designed measures and determine the breadth of resources which are needed to close gaps.

2. What are the systemic problems at the root of racial/ethnic and gender pay inequities?

In order to implement strategies that effectively target workforce-level causes of disparities in civil service, the State must clearly understand the causes. It will be important to examine whether racial/ethnic and gender pay inequities in California's civil service are driven or exacerbated by biases and barriers to participation in recruitment/outreach, exam/hiring, retention, raises, promotion, or a combination of these.

[72] As of January 1, 2018, public and private employers can no longer ask applicants about their prior salary history.

The State can leverage the following in-house data to provide a more holistic picture of what causes racial/ethnic pay gaps:

a. Analyze pay differences within classifications, controlling for service months: If there are disparities within classifications, this may point to racial pay gaps being driven by system-wide differences in starting pay, discrepancies in how Merit Salary Adjustments (MSA) are allocated, or even potential biases and discrimination by management. It is important to control for service months as employees typically move up pay scale ranges and receive higher compensation over time, so it is reasonable to expect that those who have been employed longer will receive higher pay.
b. Assess whether there is disproportionality in Merit Salary Adjustments (MSAs): A key question that remains is whether there are disparities among people who hold the same position. Employees are eligible to receive a Merit Salary Adjustment (MSA) of 5% every year. However, an employee may become ineligible for a MSA due to poor performance. While supervisors must inform employees in advance that their MSA is being denied, and meet basic criteria for denial, it worthwhile to understand whether some processes disproportionately impact employees of color or some policies have unintended consequences.
c. Evaluate civil service application, exam, and hiring data: It would be useful to explore application, exam, and hiring data to determine whether women and employees of color are accepted into various phases of the civil service hiring process and hired at the same rates at which they apply for positions. This information could demonstrate whether aspects of the recruitment or hiring process are impediments to greater equity.
d. Conduct longitudinal analysis by tracking job classifications over time: The State could also look at the mobility of underrepresented groups over time to establish whether they are moving up the career ladder and receiving promotions within civil service at the same rate as other employee groups.
e. Qualitative interviews: Qualitative interviews with employees, EEO officers, and state department HR officials will also serve as a rich source of information. The State could continue the stakeholder interviews which began as part of this research. While quantitative data can pinpoint trends, learning directly from employees about their experiences and challenges can shed light on stories and trends not identified through quantitative data.

3. How have some groups, such as Black individuals, become more equitably represented in State civil service? Which practices will be most effective in further advancing pay parity?

Since it was outside the scope of this project, this analysis only touched the surface in providing recommendations to build a more diverse and equitable workforce through recruitment, hiring, development/training, and promotion practices. Additional research should more deeply study best practices to promote parity in the workforce, narrowing in on strategies that most appropriately tackle the underlying causal factors of inequity in California government.

As discussed on page 29, some racial/ethnic groups such as Black individuals have historically had a strong pipeline to enter public service. Although this report revealed that there are still existing disparities (e.g., Black employees are disproportionately represented in lower paying supervisor positions as opposed to higher paying supervisor positions), this history provides an opportunity for State government to examine more broadly how the civil service may reduce barriers to entry and upward mobility. Further research could study factors which cultivated this pipeline, how successes can be replicated for other underrepresented groups, and how groups can continue to move up the pay ladder in civil service.

4. What is the magnitude of inequality when including independent contractors in future analysis?

A significant limitation of this analysis is that it does not include independent contractors. Neither Report 5102 nor the ACS counts independent contractors as employees of the State. Future research should find a method to incorporate them into analysis. While the author was unable to find an exact percentage or publicly available data to back up this assertion, it is believed that in some departments and agencies a sizeable share of team units are contracted workers. If there is reason to suspect that new employees or people of color are increasingly funneled into contract work, this could have ramifications in terms of pay parity, equitable benefits, and job stability for these groups.

5. Why is the racial/ethnic pay gap better in the federal civil service, but larger in California's private sector?

It would be interesting to investigate why the federal civil service has a smaller racial/ethnic pay gap, and why the private sector has a larger one. This might provide insight into opportunities the State should explore, or pitfalls the State should be cautious to avoid.

Conclusion

California prides itself on being a leader of other states and nations. California's 2014 Gender Pay Report was ground-breaking in putting gender parity on the public agenda and catalyzing action to remedy the gaps that were found. The State has an opportunity to do something similar regarding racial equity.

This paper found that the racial/ethnic pay gap between employees of color and White employees in the civil service is 14%. While this may seem like a relatively small difference, that 14% pay gap can add up to a salary or wage disparity of approximately $10,000 each year.[73]

[73] See Appendix D. Projections were determined by taking the difference between White employees' and employees' of color average monthly pay in both Report 5102 and the ACS, and then multiplying the midpoint between these differences by 12 to provide an annual estimate.

At the same time, racial/ethnic and sex pay gaps in California's civil service reach upwards of an estimated 36%, potentially leading to a $29,500 difference in pay annually Not only are pay gaps large, but the inequitable concentration of racial/ethnic and sex groups across occupation, supervisor status, and other pay determinants leads to major disparities within the State's civil service. Moreover, findings on educational attainment indicate that pay inequities are pervasive even after controlling for variables which should otherwise create a more leveled playing field.

As next steps, GARE Capitol Cohort members should integrate racial equity analyses and strategies into their respective departments to propel change from within State government. State government as a whole should also take comprehensive measures to better understand racial and gender inequities, mitigate existing pay disparities within government, and prevent ongoing and future inequities. This includes revisiting current data reporting and collection practices and building on existing racial equity and workforce development programs.

Finally, these strategies should be pursued with urgency. As CalHR estimates that it would take until the year 2044 to close the gender pay gap,[74] it is reasonable to expect that closing the racial/ethnic pay gap would take at least as long, and possibly longer. California is already leading the rest of the country in its immigration and other inclusionary policies, and has not only an obligation to address its racial pay gaps, but also faces an exciting opportunity to catalyze change here at home and set an example for local governments and other states.

[74] 2014 Report on Women's Earnings in California State Civil Service Classifications. California Department of Human Resources. October 2016.

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Appendices

Appendix A: Demographic Breakdown of All Racial/Ethnic Groups in State Government by Sex (Report 5102)

	Females		Males		Both Sexes	
Race/Ethnicity	N	% of Civil Service	N	% of Civil Service	N	% of Civil Service
Asian - Cambodian	118	0.05%	88	0.04%	206	0.10%
Asian - Chinese	4,345	2.02%	3,678	1.71%	8,023	3.74%
Asian - Filipino	7,147	3.33%	5,510	2.57%	12,657	5.89%
Asian - Indian	1,990	0.93%	2,047	0.95%	4,037	1.88%
Asian - Japanese	858	0.40%	899	0.42%	1,784	0.83%
Asian - Korean	484	0.23%	546	0.25%	1,030	0.48%
Asian - Laotian	103	0.05%	80	0.04%	183	0.09%
Asian - Multiple	171	0.08%	125	0.06%	296	0.14%
Asian - Other	2,546	1.19%	3,207	1.49%	5,753	2.68%
Asian - Vietnamese	1,711	0.80%	1,691	0.79%	3,402	1.58%
Black	11,950	5.56%	9,085	4.23%	21,035	9.79%
Hispanic	24,098	11.22%	29,279	13.63%	53,377	24.85%
Native American or Alaska Native	641	0.30%	712	0.33%	1,353	0.63%
Other or Multiple Race	3,291	1.53%	3,556	1.66%	6,847	3.19%
Pacific Islander - Guamanian	87	0.04%	91	0.04%	178	0.08%
Pacific Islander - Hawaiian	106	0.05%	123	0.06%	229	0.11%
Pacific Islander - Multiple	20	0.01%	14	0.01%	34	0.02%
Pacific Islander - Other	442	0.21%	509	0.24%	951	0.44%
Pacific Islander - Samoan	84	0.04%	47	0.02%	131	0.06%

Source: 2017 CalHR Statewide 5102 Report

Appendix B: ACS Population Representation and Demographic Distribution Compared to State Civil Service Breakdown from Report 5102

Population representation by year (state civil service = 214,755):

- ACS 2014 = 213,026
- ACS 2015 = 257,318
- ACS 2016 = 249,752

Sex	% of ACS Sample	% of State Civil Service
Male	44.86%	53.88%
Female	55.14%	46.12%

Source: 2014-2016 ACS

Race/Ethnicity	% of ACS Sample	% of State Civil Service
White	42.02%	43.42%
Asian	15.36%	17.40%
Black	11.96%	9.79%
Hispanic	28.61%	24.85%
Native American or Alaskan Native	.91%	0.63%
Pacific Islander	.62%	0.72%
Other or Multiple Race	.52%	3.19%
Persons of Color (PoC)	57.98%	56.58%

Source: 2014-2016 ACS

Appendix C: Regression output of "incwage" on male to calculate gender pay gap in ACS 2014-2016

```
. reg incwage male if state==1 & pubadmin==1 & fulltime==1 & yearround==1 [pweight=perwt]
(sum of wgt is   5.7231e+05)

Linear regression                               Number of obs     =      5,649
                                                F(1, 5647)        =     297.57
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0653
                                                Root MSE          =      39724
```

incwage	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
male	**21004.49**	**1217.632**	**17.25**	**0.000**	**18617.46**	**23391.51**
_cons	**55536.48**	**781.2**	**71.09**	**0.000**	**54005.03**	**57067.93**

Source: 2014-2016 ACS

Appendix D: Comparison of Avg. Pay by Race/Ethnicity & Sex in Report 5102 vs. the ACS

Both Sexes			
Race/Ethnicity	ACS - Avg. Monthly Pay	Report 5102 - Avg. Monthly Pay	Difference (ACS - Report 5102)
Asian	$5,422.94	$5,973.21	-$550.27
Black	$5,171.22	$5,179.58	-$8.36
Hispanic	$4,667.91	$5,183.93	-$516.02
Native American or Alaska Native[75]	$4,876.19	$5,095.62	-$219.43
Other or Multiple Race[76]	$5,849.51	$5,723.36	$126.15
Pacific Islander[77]	$3,772.31	$5,172.63	-$1,400.32
White	$6,124.92	$5,967.10	$157.82
Persons of Color	$4,973.69	$5,455.21	-$481.52
Underrepresented minorities (URM)	$4,819.44	$5,181.15	-$361.71
Females			
Race/Ethnicity	ACS - Avg. Monthly Pay	Report 5102 - Avg. Monthly Pay	Difference (ACS - Report 5102)
Asian	$4,821.60	$5,668.79	-$847.19
Black	$4,726.90	$4,984.77	-$257.87
Hispanic	$3,739.95	$4,807.51	-$1,067.56
Native American or Alaskan Native**Error! Bookmark not defined.**	$3,963.52	$4,736.45	-$772.93
Other or Multiple Race**Error! Bookmark not defined.**	$5,802.62	$5,331.99	$470.63
Pacific Islander**Error! Bookmark not defined.**	$3,365.24	$4,906.09	-$1,540.85
White	$5,166.53	$5,603.76	-$437.24
Females of Color	$4,265.64	$5,150.70	-$885.06
URM Females	$4,050.39	$4,864.00	-$813.61
Males			
Race/Ethnicity	ACS - Avg. Monthly Pay	Report 5102 - Avg. Monthly Pay	Difference (ACS - Report 5102)
Asian	$6,205.32	$6,305.38	-$100.06
Black	$5,760.85	$5,435.84	$325.01
Hispanic	$5,692.29	$5,493.75	$198.54
Native American or Alaskan Native**Error! Bookmark not defined.**	$6,240.95	$5,418.98	$821.97
Other or Multiple Race**Error! Bookmark not defined.**	$5,932.35	$6,085.56	-$153.21
Pacific Islander**Error! Bookmark not defined.**	$4,437.58	$5,423.88	-$986.30
White	$6,968.39	$6,226.27	$742.12
Males of Color	$5,831.70	$5,754.41	$77.29

[75] Small sample size in ACS, Native American or Alaskan Native N = 65 (41 females and 24 males).
[76] Small sample size in ACS, Other or Multiple Race N = 27 (16 females and 11 males).
[77] Small sample size in ACS, Pacific Islander N = 29 (15 females and 14 males).

URM Males	$5,720.46	$5,478.92	$241.54

Sources: 2017 CalHR Statewide 5102 Report & 2014-2016 ACS

Note: Only full-time year-round workers from the ACS were included in this comparison

Appendix E: Average Monthly Pay by Race/Ethnicity for Both Sexes

Race/Ethnicity	Avg. Pay (Monthly)	95% Confidence Interval
Asian	$5,973.21	5947.358, 5999.066
Black	$5,179.58	5148.802, 5210.367
Hispanic	$5,183.93	5167.391, 5200.476
Native American or Alaskan Native	$5,095.62	4981.488, 5209.75
Other or Multiple Race	$5,723.36	5664.539, 5782.18
Pacific Islander	$5,172.63	5070.874, 5274.39
White	$5,967.10	5950.643, 5983.548
Employees of Color	$5,455.21	5442.444, 5467.97
URM Employees	$5,181.15	5166.554, 5195.743

Source: 2017 CalHR Statewide 5102 Report

Appendix F: Average Monthly Pay by Race/Ethnicity for Females

Race/Ethnicity	Avg. Pay (Monthly)	95% Confidence Interval
Asian	$5,668.79	5636.427, 5701.155
Black	$4,984.77	4946.448, 5023.082
Hispanic	$4,807.51	4783.855, 4831.158
Native American or Alaskan Native	$4,736.45	4588.012, 4884.881
Other or Multiple Race	$5,331.99	5258.392, 5405.586
Pacific Islander	$4,906.09	4770.931, 5041.248
White	$5,603.76	5579.095, 5628.42
Females of Color	$5,150.70	5133.735, 5167.661
URM Females	$4,864.00	4843.89, 4884.11

Source: 2017 CalHR Statewide 5102 Report

Appendix G: Average Monthly Pay by Race/Ethnicity for Males

Race/Ethnicity	Avg. Pay (Monthly)	95% Confidence Interval
Asian	$6,305.38	6265.001, 6345.763
Black	$5,435.84	5385.926, 5485.756
Hispanic	$5,493.75	5471.33, 5516.171
Native American or Alaskan Native	$5,418.98	5251.344, 5586.606
Other	$6,085.56	5996.687, 6174.441
Pacific Islander	$5,423.88	5274.571, 5573.179
White	$6,226.27	6204.505, 6248.036
Males of Color	$5,754.41	5735.671, 5773.149

URM Males	$5,478.92	5458.28, 5499.57

Source: 2017 CalHR Statewide 5102 Report

Appendix H: Average Pay by Disaggregated Race/Ethnicities for Both Sexes, Females, and Males, Including 95% Confidence Intervals

Race/Ethnicity	Avg. Pay for Both Sexes	95% Confidence Interval	Avg. Pay for Females	95% Confidence Interval	Avg. Pay for Males	95% Confidence Interval
Asian - Cambodian	$5,235.98	4969.203, 5502.755	$4,879.77	4545.898, 5213.649	$5,713.62	5291.237, 6135.999
Asian - Chinese	$6,265.43	6209.721, 6321.136	$5,869.52	5805.42, 5933.627	$6,733.13	6640.307, 6825.953
Asian - Filipino	$5,406.35	5369.352, 5443.338	$5,296.24	5248.665, 5343.815	$5,549.16	5490.941, 5607.383
Asian - Indian	$6,759.39	6653.053, 6865.735	$6,285.66	6152.135, 6419.181	$7,219.94	7057.576, 7382.302
Asian - Japanese	$6,323.99	6209.643, 6438.329	$6,051.31	5904.455, 6198.172	$6,592.41	6419.031, 6765.792
Asian - Korean	$6,775.98	6602.035, 6949.928	$6,715.62	6466.22, 6965.028	$6,829.49	6586.352, 7072.617
Asian - Laotian	$4,981.94	4748.638, 5215.249	$4,780.52	4485.938, 5075.11	$5,241.27	4866.228, 5616.312
Asian - Multiple	$6,281.88	6013.345, 6550.407	$6,128.99	5783.084, 6474.904	$6,491.02	6063.368, 6918.669
Asian - Other	$6,055.91	5989.605, 6122.217	$5,664.18	5570.631, 5757.728	$6,366.90	6275.368, 6458.436
Asian - Vietnamese	$5,964.42	5887.802, 6041.029	$5,572.54	5470.92, 5674.161	$6,360.93	6249.136, 6472.716
Black	$5,179.58	5148.802, 5210.367	$4,984.77	4946.448, 5023.082	$5,435.84	5385.926, 5485.756
Hispanic	$5,183.93	5167.391, 5200.476	$4,807.51	4783.855, 4831.158	$5,493.75	5471.33, 5516.171
Native American or Alaska Native	$5,095.62	4981.488, 5209.75	$4,736.45	4588.012, 4884.881	$5,418.98	5251.344, 5586.606
Other or Multiple Race	$5,723.36	5664.539, 5782.18	$5,331.99	5258.392, 5405.586	$6,085.56	5996.687, 6174.441
Pacific Islander - Guamanian	$5,216.72	4938.26, 5495.172	$4,914.40	4538.32, 5290.47	$5,505.75	5098.624, 5912.873
Pacific Islander - Hawaiian	$5,319.23	5046.318, 5592.144	$5,270.94	4852.06, 5689.821	$5,360.85	4997.897, 5723.797
Pacific Islander - Multiple	$6,074.69	5290.181, 6859.202	$5,209.43	4464.973, 5953.877	$7,310.79	5857.244, 8764.328
Pacific Islander - Other	$5,218.36	5087.446, 5349.278	$4,979.32	4804.059, 5154.584	$5,425.94	5235.743, 5616.13
Pacific Islander - Samoan	$4,290.36	4034.369, 4546.352	$3,979.52	3705.895, 4253.137	$4,845.91	4351.261, 5340.565
White	$5,967.10	5950.643, 5983.548	$5,603.76	5579.095, 5628.42	$6,226.27	6204.505, 6248.036

Source: 2017 CalHR Statewide 5102 Report

Appendix I: Regression output for White vs. employee of color pay among part-time year-round, seasonal full-time, and part-time seasonal employment

```
. reg incwage white if parttime==1 & seasonal==0 & state==1 & pubadmin==1 [pweight=perwt]
(sum of wgt is   8.6711e+04)

Linear regression                               Number of obs     =        823
                                                F(1, 821)         =      10.04
                                                Prob > F          =     0.0016
                                                R-squared         =     0.0162
                                                Root MSE          =      20148

------------------------------------------------------------------------------
             |               Robust
     incwage |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       white |   5543.341   1749.034     3.17   0.002     2110.236    8976.447
       _cons |   14303.18   633.3498    22.58   0.000     13060.01    15546.36
------------------------------------------------------------------------------

. reg incwage white if parttime==0 & seasonal==1 & state==1 & pubadmin==1 [pweight=perwt]
(sum of wgt is   3.6379e+04)

Linear regression                               Number of obs     =        402
                                                F(1, 400)         =       8.92
                                                Prob > F          =     0.0030
                                                R-squared         =     0.0349
                                                Root MSE          =      32224

------------------------------------------------------------------------------
             |               Robust
     incwage |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       white |   12850.06   4303.524     2.99   0.003     4389.715    21310.42
       _cons |   28632.79   2350.914    12.18   0.000      24011.1    33254.48
------------------------------------------------------------------------------

. reg incwage white if parttime==1 & seasonal==1 & state==1 & pubadmin==1 [pweight=perwt]
(sum of wgt is   2.4693e+04)

Linear regression                               Number of obs     =        260
                                                F(1, 258)         =      10.03
                                                Prob > F          =     0.0017
                                                R-squared         =     0.0864
                                                Root MSE          =      20326

------------------------------------------------------------------------------
             |               Robust
     incwage |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       white |   12654.63    3996.14     3.17   0.002     4785.426    20523.83
       _cons |   8231.268   1059.896     7.77   0.000     6144.119    10318.42
------------------------------------------------------------------------------
```

Source: 2014-2016 ACS

Appendix J: Average Pay by Occupational Group

Occupational Group	N	%	Average Pay (Monthly)	95% Confidence Interval (Monthly Pay)
1. Management Occupations	5616	2.62%	$10,516.03	10437.57, 10594.48
2. Legal Occupations	4624	2.15%	$9,345.03	9282.413, 9407.646
3. Architecture and Engineering Occupations	11698	5.45%	$7,914.06	7882.264, 7945.846
4. Community and Social Service Occupations	5295	2.47%	$6,665.53	6630.739, 6700.317
5. Computer and Mathematical Occupations	11414	5.31%	$6,599.16	6582.767, 6615.558
6. Healthcare Practitioners and Technical Occupations	18282	8.51%	$6,579.05	6529.867, 6628.229
7. Education, Training, and Library Occupations	2184	1.02%	$6,414.59	6350.697, 6478.481
8. Life, Physical, and Social Science Occupations	9204	4.29%	$6,300.03	6258.785, 6341.283
9. Production Occupations	1720	0.80%	$5,997.99	5928.17, 6067.811
10. Protective Service Occupations	44225	20.59%	$5,948.05	5933.208, 5962.897
11. Business and Financial Operations Occupations	42787	19.92%	$5,460.17	5449.805, 5470.542
12. Arts, Design, Entertainment, Sports, and Media Occupations	698	0.33%	$5,445.94	5385.199, 5506.674
13. Sales and Related Occupations	1610	0.75%	$5,078.91	5023.747, 5134.075
14. Installation, Maintenance, and Repair Occupations	3199	1.49%	$4,780.57	4732.03, 4829.111
15. Construction and Extraction Occupations	6765	3.15%	$4,513.46	4489.548, 4537.381
16. Transportation and Material Moving Occupations	1819	0.85%	$3,858.25	3801.973, 3914.534
17. Office and Administrative Support Occupations	31817	14.82%	$3,565.87	3558.531, 3573.213
18. Healthcare Support Occupations	1667	0.78%	$3,544.53	3495.049, 3594.011
19. Food Preparation and Serving Related Occupations	2464	1.15%	$3,383.78	3344.489, 3423.078
20. Personal Care and Service Occupations	346	0.16%	$3,183.88	3126.841, 3240.924
21. Farming, Fishing, and Forestry Occupations	806	0.38%	$2,932.63	2867.756, 2997.502
22. Other Occupations	3538	1.65%	$2,917.47	2714.245, 3120.7

23. Building and Grounds Cleaning and Maintenance Occupations	2977	1.39%	$2,761.96	2743.323, 2780.603

Source: 2017 CalHR Statewide 5102 Report

Appendix K: Representation of Racial/Ethnic and Sex Subgroups Across Occupational Group Quintiles

	Asian		Black		Hispanic		Native American/ Alaska Native		Other or Multiple Race		Pacific Islander		White	
Quintile	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**
Lowest Paid Quintile	9.82%	10.34%	10.76%	14.52%	31.68%	31.26%	0.84%	0.92%	3.36%	2.38%	0.59%	1.15%	42.96%	39.44%
2nd Lowest Paid Quintile	14.49%	18.05%	15.39%	12.68%	32.30%	30.06%	0.97%	0.76%	2.89%	3.00%	0.87%	0.85%	33.08%	34.59%
Middle Quintile	22.63%	16.18%	10.53%	8.42%	21.26%	22.54%	0.51%	0.78%	4.06%	3.74%	0.90%	0.85%	40.12%	47.49%
2nd Highest Paid Quintile	20.41%	9.94%	12.24%	6.80%	23.32%	30.26%	.51%	0.58%	2.54%	2.29%	0.52%	0.58%	40.46%	49.55%
Highest Paid Quintile	24.07%	26.27%	9.19%	6.11%	16.18%	14.18%	0.53%	0.39%	3.82%	4.24%	0.58%	0.55%	45.64%	48.25%

Appendix L: Distribution of Racial/Ethnic and Sex Subgroups Across Rank and File vs. Supervisor Classifications

	Percent of State Civil Service		Percent of State Rank and File		Percent of State Supervisors	
Race/Ethnicity	**F**	**M**	**F**	**M**	**F**	**M**
Asian	9.08%	8.32%	9.26%	8.56%	7.72%	6.53%
Black	5.56%	4.23%	5.52%	4.30%	5.94%	3.70%
Hispanic	11.22%	13.63%	11.27%	14.08%	10.86%	10.22%
Native American or Alaska Native	0.30%	0.33%	0.30%	0.34%	0.29%	0.27%
Other or Multiple Race	1.53%	1.66%	1.51%	1.67%	1.72%	1.53%
Pacific Islander	0.34%	0.37%	0.34%	0.37%	0.36%	0.33%
White	18.08%	25.34%	17.26%	25.23%	24.32%	26.20%
Total	46.12%	53.88%	45.45%	54.55%	51.21%	48.79%

Source: 2017 CalHR Statewide 5102 Report

Note: Rank and File N = 189,838 & Supervisor N = 24,917

Appendix M: Rank and File and Supervisor Average Monthly Pay by Race/Ethnicity

Rank and File Avg. Monthly Pay by Race/Ethnicity

Race/Ethnicity	Avg. Pay (Monthly)	95% Confidence Interval
Asian	$5,797.73	5771.564, 5823.904
Black	$4,976.33	4945.84, 5006.813
Hispanic	$5,051.27	5034.75, 5067.797
Native American or Alaskan Native	$4,925.54	4811.009, 5040.065
Other or Multiple Race	$5,458.26	5401.98, 5514.53
Pacific Islander	$5,010.88	4905.573, 5116.184
White	$5,683.73	5667.316, 5700.137
All Employees	$5,457.48	5447.312, 5467.647
Employees of Color	$5,290.33	5277.553, 5303.106
URM	$5,028.48	5013.958, 5043.006

Source: 2017 CalHR Statewide 5102 Report

Supervisors and Managers Avg. Monthly Pay by Race/Ethnicity

Race/Ethnicity	Avg. Pay (Monthly)	95% Confidence Interval
Asian	$7,645.52	7552.9, 7738.135
Black	$6,756.31	6645.555, 6867.07
Hispanic	$6,399.01	6334.632, 6463.383
Native American or Alaskan Native	$6,581.09	6169.342, 6992.827
Other or Multiple Race	$7,696.44	7471.808, 7921.075
Pacific Islander	$6,434.87	6136.561, 6733.169
White	$7,782.69	7731.368, 7834.018
All Employees	$7,353.58	7318.083, 7389.075
Employees of Color	$6,915.38	6867.605, 6963.155
URM	$6,512.36	6456.571, 6568.141

Source: 2017 CalHR Statewide 5102 Report

Appendix N: ACS “educd” educational attainment values available for respondents

- 1 or more years of college credit, no degree
- 12th grade, no diploma
- Associate's degree, type not specified
- Bachelor's degree
- Doctoral degree
- Ged or alternative credential
- Grade 1
- Grade 10
- Grade 11
- Grade 2
- Grade 3
- Grade 4
- Grade 5
- Grade 6
- Grade 7
- Grade 8
- Grade 9
- Kindergarten
- Master's degree
- No schooling completed
- Nursery school, preschool
- Professional degree beyond a bachelor’s degree
- Regular high school diploma
- Some college, but less than 1 year

Appendix O: Average Monthly Pay by Disaggregated Race/ethnicity, Controlling for Degree (bachelor's or graduate degree) or No Degree (Full-time year-round employees only)

Subgroup	Avg. Monthly Pay	P-Value	N
Without Degree			
Asian	$3,925.10	.000	282
Black	$4,524.61	.002	372
Hispanic	$4,338.17	.000	1056
Native American/Alaska Native	$4,735.46	.460	51
Other	$5,389.06	.842	13
Pacific Islander	$3,358.84	.000	23
White	$5,228.66	.000	1464
With Degree			
Asian	$6,219.96	.342	597
Black	$6,594.41	.925	189
Hispanic	$5,725.41	.014	367
Native American/Alaska Native	$5,234.90	.076	14
Other	$6,252.70	.319	14
Pacific Islander	$5,076.11	.742	6
White	$7,260.90	.000	1201

Source: 2014-2016 ACS

Appendix P: Average Annual Pay by Race/Ethnicity, Controlling for Less than Bachelor's, Bachelor's, and Graduate Degree (Full-time year-round employees only)

Subgroup	Avg. Annual Pay	Return on degree	P-value	Sample size
Less than bachelor's				
Asian	$47,101.18	-	.000	282
Black	$54,295.29	-	.002	372
Hispanic	$52,058.05	-	.000	1056
Other	$52,270.76	-	.033	87*
White	$62,743.96	-	.000	1464
Bachelor's degree				
Asian	$51,425.47	$4,324.29	.002	401
Black	$65,440.21	$11,144.92	.805	123
Hispanic	$54,961.42	$2,903.37	.001	274
Other	$57,623.69	$5,352.93	.312	27*
White	$75,055.65	$12,311.69	.000	718
Graduate degree				
Asian	$78,031.46	$26,605.99	.000	196
Black	$91,925.36	$26,485.15	.004	66*
Hispanic	$70,837.57	$15,876.15	.000	93
Other	$59,811.07	$2,187.38	.000	7*
White	$119,998.01	$44,942.36	.000	483

Source: 2014-2016 ACS

**Note: Sample size less than 100*

Appendix Q: Avg. Monthly Pay by Race/Ethnicity Across Sectors (Full-time year-round employees only)

Race/ethnicity	CA State Civil Service	Federal Civil Service in CA	Private Sector in CA
Asian	$5,422.94	$6,426.47	$6,471.47
Black	$5,171.22	$5,406.85	$4,471.98
Hispanic	$4,667.91	$5,286.06	$3,233.25
Native American or Alaska Native	$4,876.19	$5,140.31	$5,274.87
Other or Multiple Race	$5,849.51	$6,071.90	$5,750.94
Pacific Islander	$3,772.31	$5,754.27	$4,557.47
White	$6,124.92	$6,757.90	$7,320.32
Persons of Color	$4,973.69	$5,648.13	$4,237.06
URM individuals	$4,819.44	$5,327.52	$3,386.28

Source: 2014-2016 ACS

Appendix R: California Dept. of Human Resources State Employee Race/Ethnicity Questionnaire (Form 1070)

CALHR
CALIFORNIA DEPARTMENT OF HUMAN RESOURCES

State Employee Race/Ethnicity Questionnaire

California Department of Human Resources
State of California

INSTRUCTIONS:
All new/rehired employees are requested to voluntarily self-identify their race/ethnicity and gender in order to monitor and evaluate the provision of equal employment opportunity and non-discriminatory employment practices within the state civil service. Complete the form promptly and return it to your department's Personnel Office with your other hiring documents.
Note: If you choose not to identify, the department is required to visually identify under federal law.

Department | Employee's Name | Last 4 digits of SSN

Person ID Number (if applicable)

GENDER: ☐ Male ☐ Female

RACE AND ETHNICITY

Please check *one box that best describes* your race or ethnicity.

- ☐ **BLACK or AFRICAN AMERICAN** (F)
- ☐ **AMERICAN INDIAN or ALASKA NATIVE** (H)
- ☐ **HISPANIC or LATINO** (alone or in combination with any other race) (D)
- ☐ **WHITE** (E)
- ☐ **MULTIPLE RACES**[1] (Non Hispanic or Latino) (X)

ASIAN

- ☐ Multiple Asian[2] (S)
- ☐ Cambodian (U)
- ☐ Chinese (J)
- ☐ Filipino (G)
- ☐ Indian (M)
- ☐ Japanese (I)
- ☐ Korean (K)
- ☐ Laotian (V)
- ☐ Vietnamese (L)
- ☐ Other Asian (S)

PACIFIC ISLANDER

- ☐ Multiple Pacific Islander[3] (T)
- ☐ Guamanian (R)
- ☐ Hawaiian (P)
- ☐ Samoan (Q)
- ☐ Other Pacific Islander (T)

☐ **I choose not to identify. I understand that I must be visually identified under Federal law.**

1 If you identify with more than one race that is non Hispanic or Latino, select Multiple Races.
2 If you identify with more than one Asian ethnicity, select Multiple Asian.
3 If you identify with more than one Pacific Islander ethnicity, select Multiple Pacific Islander.

Employee Signature | Date

Privacy Notice on Information Collection

The California Department of Human Resources (CalHR) is committed to maintaining the privacy of your personal information. All information we collect is governed by the State of California Information Practices Act of 1977 (Civ. Code, §§ 1798-1798.78), Government Code section 11015.5, Government Code section 11019.9, and the California Public Records Act (Gov. Code, §§ 6250-6270.5).

Appendix S: Example of Alternate Report 5102 Organization Per Recommendation 6B

Current Report 5102 Format:

Cartographers and Photogrammetrists	17-1021				3	33%	6	67%	9	100%
		RB81	7193	INDUSTRIAL SUPERVISOR, PRISON INDUSTRIES (DIGITAL SERVICES)	0	0%	1	100%	1	100%
				White	0	0%	1	100%	1	100%
		GG40	3092	PHOTOGRAMMETRIST I	1	100%	0	0%	1	100%
				Asian - Chinese	1	100%	0	0%	1	100%
		GG30	3090	PHOTOGRAMMETRIST II	2	29%	5	71%	7	100%
				Asian - Chinese	0	0%	1	14%	1	14%
				Asian - Filipino	1	14%	1	14%	2	29%
				Asian - Other	1	14%	0	0%	1	14%
				Hispanic	0	0%	2	29%	2	29%
				White	0	0%	1	14%	1	14%
				Persons With Disabilities	*	*	*	*	1	14%

Suggested Report 5102 Format, in Addition to or in Place of Existing Presentation:

Employee Category	SOC Code	Schem Code	Class Code	Class Title	Race/Ethnicity	Sex
Cartographers and Photogrammetrists	17-1023	RB82	7194	INDUSTRIAL SUPERVISOR, PRISON INDUSTRIES (DIGITA	White	Male
Cartographers and Photogrammetrists	17-1025	GG41	3093	PHOTOGRAMMETRIST I	Asian - Chinese	Female
Cartographers and Photogrammetrists	17-1027	GG31	3091	PHOTOGRAMMETRIST II	Asian - Chinese	Male
Cartographers and Photogrammetrists	17-1028	GG32	3092	PHOTOGRAMMETRIST II	Asian - Filipino	Male
				PHOTOGRAMMETRIST II	Asian - Filipino	Female
Cartographers and Photogrammetrists	17-1029	GG33	3093	PHOTOGRAMMETRIST II	Asian - Other	Female
Cartographers and Photogrammetrists	17-1030	GG34	3094	PHOTOGRAMMETRIST II	Hispanic	Male
				PHOTOGRAMMETRIST II	Hispanic	Male
Cartographers and Photogrammetrists	17-1031	GG35	3095	PHOTOGRAMMETRIST II	White	Male
				PHOTOGRAMMETRIST II	Persons With Disabilities	*
Cartographers and Photogrammetrists	17-1032	GG36	3096	PHOTOGRAMMETRIST II	Persons With Disabilities	*